

U.S. Army Combat Support Training Center, Camp Parks

Site Investigation Report, PRFTA 13

Contract # W911SO-04-F0017

Submitted to:

United States Army Environmental Center

Northern Regional Contracting Center

Attn: Renzer Brown

Building 2798 Harrison Loop complex

Fort Eustis, Virginia 23604



Contracted by:

Northern Regional Contracting Center

Fort Eustis, VA 23604

KEMRON Environmental Services, Inc.

1359-A Ellsworth Industrial Boulevard

Atlanta, GA 30318



April 2006

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Former Tank Farm (PRFTA 13)
U.S. Army Combat Support Training Center, Camp Parks (CTSC)
Dublin, California**

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MACTEC Project No. 3618048128-04

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April 17, 2006

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DISTRIBUTION

1.0 INTRODUCTION

This Site Investigation Report was prepared by MACTEC Engineering and Consulting, Inc. (MACTEC) for KEMRON Environmental Services (KEMRON) on behalf of the U.S. Army Environmental Center (USAEC) to describe the results of the field investigation conducted in June and July 2005 to further characterize the subsurface conditions at the Former Tank Farm (PRFTA 13), U.S. Army Combat Support Training Center (CSTC), Camp parks (formerly the Parks Reserve Forces Training Area [PRFTA]) in the city of Dublin, California (Plate 1). The work was performed according to the approved Sampling and Analysis Plan (SAP) and Quality Assurance Project Plan (QAPP) (MACTEC, 2005a, b). The purpose of the investigation was to provide suitable site characterization in order to develop appropriate corrective actions and monitoring measures.

1.1 Background

The CSTC includes an area of about 2,500 acres, with a 487-acre cantonment area, in the eastern portion of the City of Dublin, California. PRFTA 13, the subject of this investigation, was reportedly used for fuel storage and dispensing. Fuel was reportedly stored in aboveground storage tanks (AST) and possibly in underground storage tanks (USTs). Aerial photographs of this location from 1957 and 1976 show three aboveground storage tanks (ASTs) that were located in the same configuration as three ASTs that were removed in 1993. Recent geophysical surveys did not identify any USTs. Previous site studies have indicated the potential subsurface presence of heavy metals, diesel, and related compounds that may be associated with the former storage tanks (USACHPMM, 2002b).

1.2 Description of Environmental Concerns

There are no documented spills at PRFTA 13; however, excavation of a utility trench in 2001 led to the discovery of diesel in subsurface areas that extended to the depth of groundwater. Subsequent investigations identified the presence of diesel, phenanthrene, fluorene, arsenic, lead, and barium, in the subsurface, and indicated the presence of diesel in groundwater up to 200 feet away from the apparent source area. Sample analysis indicated that diesel concentrations in groundwater ranged from 120 to 9,800 micrograms per liter ($\mu\text{g/L}$). Previous investigations and results are described in greater detail in Section 3.0.

1.3 Investigation Objectives

The overall objective of this investigation was to sufficiently characterize site conditions to enable design and implementation of remedial measures in order to mitigate the contamination that is present in the subsurface at PRFTA 13, and obtain closure of the site. The objectives of the investigation were to:

- 1 Identify the vertical and lateral extent of soil containing Total Petroleum Hydrocarbons – diesel range (TPHd) at concentrations above 100 milligrams per kilogram (mg/kg).
- 2 Identify the lateral extent of groundwater containing TPH-d at concentrations above 100 $\mu\text{g/L}$.
- 3 Ascertain whether the first occurrence of groundwater is a perched, local feature, or hydraulically connected to deeper groundwater.
- 4 Ascertain accurate groundwater flow and gradient.
- 5 Identify whether additional source material should be removed from soil or groundwater.

- 6 Identify whether suitable conditions exist to provide effective natural attenuation of diesel in soil and groundwater.
- 7 Abandon existing damaged monitoring points to prevent migration of surface materials into the subsurface.

Installation of permanent monitoring wells and collection of current water levels was also identified as an objective in the SAP; however, based on discussions with the RWQCB in September 2005, this activity was deferred until after completion of soil removal action.

2.0 SITE BACKGROUND

Camp Parks includes an area of approximately 2,500 acres of flat to rolling terrain in the eastern portion of Dublin, California and includes acreage in both Alameda and Contra Costa Counties. The CSTC provides facilities for maintaining the readiness of Reserve forces for all four military services. The cantonment area of the CSTC consists of approximately 500 acres of road networks and infrastructure, and the remaining areas are primarily open grasslands that are used for training and firing ranges.

2.1 General Land Use

The land west of the CSTC is currently in residential use, while the land use to the east and south of the cantonment area is mixed industrial and residential, and the area to the north of the CSTC is currently under residential development. Land use to the east and south of the installation's cantonment area is mixed industrial and residential, and the area to the north of the cantonment area is undeveloped. There are four correctional facilities located northeast of the cantonment area; these consist of the Federal Correctional Institution, the Federal Detention Center, the Federal Prison Camp-Dublin, and the Alameda County Santa Rita Jail. The area immediately adjacent to PRFTA 13 on the north is a mix of open space, a parking/storage area, and 4th Street.

2.2 Physical Setting

The topography at PRFTA 13 is flat, with a depth to shallow groundwater at 8 to 15 feet bgs. The groundwater has a very slight gradient and flows in a southwesterly direction. The shallow groundwater at the site is not used for domestic purposes; drinking water is supplied to the installation by the Alameda County Flood Control and Water Conservation District, Zone 7, from the Del Valle Reservoir and municipal water wells several miles south of PRFTA 13 in the city of Pleasanton. The Pleasanton wells have screened intervals in the range of 103 to 800 feet bgs. The presence of abundant clay layers at the site found during the Phase 1 and 2 PRFTA 13 investigations indicate there is little or no interconnection between the shallow groundwater and the deeper aquifers that supply water to the area (*USACHPPM, 2002a and 2002b*).

2.2.1 Surface Water

Surface water features at PRFTA 13 are shown on Plate 2. Within the cantonment area, storm water is collected by a series of man-made ditches that flow off site to the southwest. A drainage ditch runs along the northwestern boundary of PRFTA 13 and only flows during storm events. Preliminary site measurements indicate that the bottom of the ditch is shallower than the depth to groundwater. There are no other surface water features in the vicinity of the Former Tank Farm. The nearest perennial surface water feature is Tassajara Creek which flows southward along the eastern boundary of CSTC. This creek is over a mile from the Former Tank Farm and would not expect to be affected by runoff or shallow groundwater from the site.

2.2.2 Sediment

Soils in the immediate vicinity of the Former Tank Farm site are Sunnyvale clay loam over clay (*USACHPPM, 2002b*). The surface clays extend to approximately 7 feet bgs. The clay loam is characterized as gray to black in color, slightly calcareous, with low permeability. The surface clays are underlain by a two-foot thick lens of brown to dark brown silty clay with occasional mottling. Water bearing fine sandy clay to clayey sand underlies the silty clays from approximately 9 feet bgs to 15 feet bgs, which was the extent of the depth of the boring installed during the Phase 2 investigation. In the June 2005 investigation two additional soil borings (P13SCGW07, and P13SCGW15) were drilled to a depth of thirty feet to further characterize the subsurface conditions below the water bearing sandy clay to clayey sand. Based on these borings, the clayey sand layer is underlain by additional olive brown clay to a depth of thirty feet.

2.2.3 Hydrogeology

Groundwater in the Dublin sub-basin is both unconfined and confined (*USACHPPM, 2002*). In the shallow, unconfined aquifers, the depth to groundwater is about 20 feet bgs. Generally, the shallow groundwater has a potentiometric surface that slopes southward at about 0.004 ft/ft. The potentiometric surface of the deeper, confined aquifers is characteristic of a multiple aquifer system. In the northern part of the sub-basin, groundwater occurs at about 80 feet bgs and slopes southward at about 0.006 ft/ft. In the southern part of the sub-basin, the groundwater occurs at about 50 feet and slopes southward at about 0.003 ft/ft.

Review of drilling logs from PRFTA 13 borings indicate that the uppermost 7 to 10 feet of soil are composed primarily of stiff gray and brown clays. A silty sand layer underlying the stiff clays comprises the uppermost water-bearing zone. The silty sand layer is underlain by additional clay, which may create a perched condition for this water-bearing zone. Depths to water measured in February 2001 and November 2004 indicated static groundwater at 10 to 12 feet bgs, which is deeper than the bottom of the adjacent drainage channel as indicated by preliminary site measurements. Calculations of groundwater elevations indicate that groundwater flow in the shallow water-bearing zone is generally to the south-southwest at an apparent gradient of 0.02 ft/ft (Plate 2).

2.2.4 Geology

The CSTC is located in the Livermore Valley, the most prominent valley within the Hamilton-Mt. Diablo Range in Central California. The valley is bounded on the west by the Pleasanton Ridge and on the east by the Altamont Hills. The Pleasanton Ridge and Altamont Hills consist of Jurassic to Cretaceous sedimentary rocks known as the Great Valley Sequence. The southern CSTC (Area of PRFTA 13) is underlain by Quaternary alluvium and the northern RFTA is underlain by undifferentiated Pliocene formations (*USACHPPM, 2002*). The Quaternary alluvium is classified as unconsolidated water-bearing deposits consisting of stream and lake deposited sediments characterized by various mixtures of gravel, sand, silt, and clay. The undifferentiated Pliocene formations are classified as semi-consolidated to consolidated, and are essentially not water-bearing rocks that consist of continental conglomerate, sandstone, claystone, tuff, and limestone lentils. Soils at Camp Parks are of the Altamont-Diablo association except the Tassajara Creek and Alamo Creek flood plains that consist of the Clear Lake-Cropley association (*USDA, 1966, 1977 in USACHPPM, 2002*). The majority of the soils at CSTC are of the Diablo Clay Series and the Clear Lake Clay Series that are characterized as gray to brownish-gray clays with low permeabilities.

2.3 PRFTA 13 Description

Description

The former tank farm site is a flat, grassy, triangular area located in the southern portion of the CSTC southwest of the intersection of 4th Street and Fernandez Avenue, and is bounded on the east by Fernandez Avenue, on the south by a motor pool area, and on the northwest by a man-made drainage channel. Plate 2 illustrates the site location and site features, and the locations of existing soil sampling points. Plate 4 shows the locations of existing and abandoned groundwater sampling points.

Operational History

PRFTA 13 was used as a fuel storage and dispensing area from the 1940s into the 1990s. Historical maps and drawings reportedly indicate various configurations of fuel storage through time (*USACHPPM*, 2002); although review of aerial photographs indicates that the site configuration was unchanged between at least 1957 and 1976. The site reportedly contained both USTs and ASTs, and stored diesel as well as gasoline; although no USTs have been identified. A memorandum dated 1993 did state that “the abandoned POL farm... consists of three above-ground tanks, two of which were below ground originally – a pump station, a concrete storage pad and various pipelines above and below ground” (*USACHPPM*, 2003). Historical records indicate that there were five ASTs onsite in the 1940s, but only three remained in 1993 when they were reportedly removed. It is unknown if, or when, any USTs were removed. However, a geophysical survey performed in 2003 detected no anomalies having the magnetic profile of a UST (*Bobbitt*, 2004). The configuration of known former tanks, piping, and other features are illustrated on Plate 3.

3.0 PREVIOUS PRFTA 13 ENVIRONMENTAL INVESTIGATIONS

During the fall of 2001, workers installing a new sewer line approximately 100 feet east of the former tank farm noted fuel odors, and soil samples from both the utility trench and excavation stockpiles were collected and analyzed. Five of the samples were analyzed for total petroleum hydrocarbons (TPH) in the diesel range (TPHd) and TPH in the range of oil and grease (TPH-O&G), and one sample from the trench was analyzed for TPH-O&G, TPHd, and volatile organic compounds (VOCs). No VOCs were detected, and TPH-O&G were not detected above a concentration of 100 mg/kg. However, TPHd was detected at concentrations above 100 mg/kg. Analysis indicated the presence of diesel in samples collected from 1.5 to 3 feet below ground surface (bgs) at concentrations less than 100 mg/kg, and samples collected from 8 to 12 feet bgs exhibited diesel concentrations ranging from 140 to 17,000 mg/kg. At the time of the sampling, the depth to groundwater in a nearby well was 11.5 feet bgs, which indicated that the soil samples collected from 12 feet bgs were in the saturated zone and reflected concentrations of diesel at, or near, the water table.

During May 2002, a Phase 1 investigation was performed at PRFTA 13 (*USACHPPM, 2002a*). The results of this investigation indicated an area of shallow soil contamination (less than 5 feet bgs) near the former dispensing area, with diesel concentrations of about 100 mg/kg at 4 feet bgs. The cause of this contamination was thought to have been from spillage and overfilling.

Analyses of deeper soils (greater than 8 feet bgs) further from the former dispensing area indicated two areas of contamination. Within both areas, the impacted soils were present from 8 feet bgs to the water table, which was estimated to be at a depth of 11 feet bgs. Concentrations of TPHd at 8 feet bgs were up to 11,000 mg/kg. No contamination was found in surface soils within these two impacted areas, which suggested that contaminant sources could have been USTs and/or piping.

Analysis of groundwater samples from shallow temporary wells installed during the Phase 1 investigation indicated that hydrocarbons were present in groundwater up to 200 feet southwest (downgradient) of the former tank farm. Concentrations of TPHd in well samples ranged from 120 to 9,800 µg/L. An additional groundwater sample was collected in August 2002 from Monitoring Well TFMW-9 (Plate 2), which was the well with the highest TPHd concentrations from the previous sampling. The August sample was analyzed for semi-volatile organic compounds (SVOCs), VOCs, and 8 metals. It is not known if this sample was filtered. Analytical results indicated the presence of fluorine at 4.1 µg/L, phenanthrene at 6.8 µg/L, lead at 5.6 µg/L, arsenic at 160 µg/L, and barium at 360 µg/L. No VOCs were detected. In October 2002, a Phase 2 investigation (*USACHPPM, 2002b*) was conducted at the site to assess the lateral extent of groundwater contamination and the lateral extent of impacted soils on the east border of the former tank farm.

Results of the investigation indicated that soil contamination was not present east of the former sewer trench, and no new areas of soil contamination were found. It was estimated that the volume of contaminated soils requiring remediation was approximately 600 cubic yards (cy). Groundwater sampling in existing and new wells indicated that shallow groundwater was only impacted within an area of approximately 300 feet of the source area. The findings also indicated that the shallow groundwater contamination was moving slowly in a southwesterly direction.

Additional stockpile soil sampling was performed by the CSTC in March 2004 to characterize the existing stockpiles that were generated from the sewer line excavation. Thirty-two discrete soil samples were collected and submitted as eight composite samples to characterize the 800 cubic yard stockpile. Analysis detected TPHd in seven of the samples at concentrations of less than 10 mg/kg and in one sample at a concentration of 110 mg/kg.

A geophysical survey to identify potential UST locations was performed in 2003 for 60 acres of the CSTC south of 4th Street that included PRFTA 13. Of the eleven magnetic anomalies identified at PRFTA 13, four were subsequently identified as unrelated to USTs, and five were considered “unknown,” although none of the anomalies had a magnetic configuration matching that of a UST (*Bobbitt, 2004*). During the winter of 2005, eight of the anomalies were investigated by excavating. Two of the excavations revealed issues requiring additional investigation. One excavation revealed a concrete vault of unknown purpose, and the other revealed hydrocarbon contamination at a depth of approximately 2 feet. Analytical results from previous investigations are summarized in Tables 1 through 5.

Analytical results from groundwater sampling and corresponding spatial distribution at the site are also shown on Plate 4, which illustrates the current understanding of the aerial extent of diesel contamination in groundwater.

4.0 FIELD INVESTIGATION JUNE 2005

The following sections describe the procedures and equipment used for the June 2005 field investigation.

4.1 Field and Laboratory Equipment and Procedures

Geophysical clearance for utilities or other obstructions including USA clearance was completed prior to any drilling activities. All suspect utilities or other anomalies were identified, and if necessary the borings were relocated to the nearest suitable alternative area. The clearance records are presented in Appendix A.

Thirteen soil borings were installed to a depth of fifteen feet (P13SCSB01 through P13SCSB13) using truck-mounted direct-push drilling equipment (Plate 3). The direct-push method drills by hydraulically advancing a stainless-steel core barrel to the depth desired. The core barrel encases a clear acetate liner that is extracted to log soils. All borings were continuously sampled for lithologic information. Soils were lithologically logged following ASTM Method D 2488-00 procedures. Copies of the logs are presented in Appendix B.

Soil samples collected at intervals of one, five and ten feet bgs were submitted to Columbia Analytical Laboratory in Redding, California for TPHd analysis using EPA Test Method 8015B. Two additional soil samples were collected at P13SCGW11 and P13SCGW14 based on visual observations made in the field (at depths of 11 feet bgs and 8 feet bgs respectively)(Plate 3). These samples were also submitted for TPHd analysis using EPA Test Method 8015B. All borings were permitted with Zone 7 Water Agency. Copies of the permits are provided as Appendix C.

4.2 Groundwater Sampling

Groundwater samples were collected from sixteen soil borings (P13SCGW01 through P13SCGW16) (Plate 4). Groundwater samples were collected using either a HydroPunch sampling tool as described below, or through a 2-inch PVC screen lowered into the borehole. Samples from P13SCGW07 and P13SCGW10 through P13SCGW16 were collected through the HydroPunch. The other samples were collected through the PVC screen. Once the targeted sampling depth was reached, the HydroPunch tool was threaded onto a steel drive pipe and pushed several feet into the saturated formation. The drive pipe was then pulled upward to open the inlet of the sampler, allowing groundwater to flow into the screened sample chamber. Samples were collected from the sample chamber using a disposable bottom-emptying bailer, or peristaltic pump and decanted into Laboratory supplied bottles in accordance with protocols described in the Quality Assurance Project Plan (QAPP) for TPHd.

Deviations from the SAP included the following. P13SCGW14 was originally scheduled to go as deep as thirty feet for lithology only, but the sample from eight to fifteen feet had both visual and strong hydrocarbon odor, and it was decided to not continue to thirty feet. Based on the evidence of hydrocarbons in the soil at 8 feet, a soil sample was collected in the vicinity of this boring by advancing a separate boring two feet to the east of P13SCGW14 to a depth of eight feet. The thirty-foot boring was relocated west from P13SCGW14 to P13SCGW15. One other soil sample was collected adjacent to a

HydroPunch boring (P13SCGW11) at eleven feet based on the visual and strong hydrocarbon odor in the soil from eleven to twelve feet.

All borings were permitted through Zone 7 Water Agency. Copies of the permits are included in Appendix C.

4.3 Well Destruction

The six existing damaged monitoring wells TFMW2, TFMW4, TFMW7, TFMW8, TFMW9, and TFMW10 (Plate 4) were properly destroyed in accordance with the Zone 7 Water Agency requirements using a hollow stem rotary auger drill rig. A GPS unit was used to locate TFMW2, TFMW7, and TFMW9 that were broken off below ground surface. These wells were over drilled to a depth of 20 feet and grouted up through the augers using a tremie pipe with a bentonite/cement grout to the surface. All soil cuttings and PVC debris generated were placed in 55-gallon DOT drums. A composite sample of these drill cuttings were submitted to a laboratory for characterization analysis. After receipt of the analytical results, the contents were disposed in accordance with federal, state and local regulatory requirements. A Well Completion Report was filed with the Water Resources Board in Sacramento including the well name, location, and the lithologic descriptions.

4.4 Investigation-Derived Waste Handling

All drill cuttings and decontamination rinsate was properly contained and temporarily stored onsite pending waste characterization and offsite disposal. Decontamination rinsate was placed in a DOT-approved steel drum, and soil cuttings derived from the drilling activities was placed in DOT-approved steel drums. When all drilling and sampling activities were completed, a sample of the rinsate and a composite sample of drill cuttings were submitted to a Columbia Analytical laboratory for characterization analysis. After receipt of the analytical results, impacted soil and wastewater were disposed at a facility that was appropriately permitted for the materials to be received.

4.5 Field Quality Control Measures

Quality control measures were implemented for all field work to maintain the quality and reliability of the collected data. For water sampling, duplicate samples were collected from P13SCGW09 and P13SCGW13 (Plate 4). Equipment blanks were collected from soil sampling equipment at P13SCSB04, and P13SCSB07, (Plate 3) and one equipment blank was collected from the Hydropunch sampling equipment at P13SCGW11 (Plate 4).

4.6 Equipment Decontamination

All down-hole boring equipment and reusable sampling equipment that came into contact with potential contaminated soil or water was decontaminated before and after use, and/or between uses at different sampling locations. Decontamination consisted of steam-cleaning or washing using a phosphate-free detergent wash and a distilled deionized-water rinse. All decontamination rinsate was contained in 55-gallon DOT approved drums and disposed as described in Section 4.4.

4.7 Deviations from the Sampling and Analysis Plan

Installation of permanent groundwater monitoring wells was not completed at this time based on discussions with the RWQCB. It was decided that excavation of TPH impacted soil should be completed first. Following the soil excavation, a groundwater monitoring network will be established based on the results of the removal action. This will eliminate the need for installation of monitoring wells that could require destruction prior to beginning soil excavation efforts. The selection of monitoring locations and installation of permanent monitoring wells will be discussed in the Corrective Action Plan for this site.

Two additional soil samples were also collected during the field investigation based on visual evidence of hydrocarbon impacts. Collection of these samples is discussed above in Section 4.1.

5.0 FIELD INVESTIGATION RESULTS

5.1 Lithology Results

The results of the lithology investigation are based on continuous core logging of 29 soil borings. Copies of the soil borings are provided in Appendix B. Two borings were drilled to a depth of 30 feet, and the remaining borings were drilled to about 10 feet. A geologic fence diagram of the site was created based on the results of the lithologic logging (Plate 5). A description of the site lithology is provided below.

Fill material consisting of a grayish brown clayey sand and gravel reworked in some areas with the underlying gray to brown dense fat clay extends from the surface to about two to three feet bgs. This underlying gray to brown clay continues across this site with various percentages of silt and fine sand to a depth of eight to twelve feet. Below this dense clay lies a silty to clayey sand. This sand layer varies in thickness throughout this site from two to three feet. Underlying these silty/clayey sands is a dense olive brown fat clay that extended to 30 feet in both borings. No additional water bearing lenses were identified between about 12 feet and 30 feet bgs.

5.2 Analytical Results

This section provides the analytical results for the soil and groundwater samples collected during this investigation. All data were validated in accordance with the QAPP. No data were rejected as a result of this validation.

5.2.1 Soil Sampling

Forty-six soil samples were collected from fifteen locations at PRFTA-13 (Plate 3). The analytical results are provided in Table 6. TPHd concentrations ranged from 2.5 mg/kg at P13SCSB09 to 2,500 mg/kg at P13SCSB08. Eight soil samples exceeded the RWQCB environmental screening level of 100 mg/kg. The highest TPHd concentrations were located along the eastern side of the site, just to the west of Fernandez Ave. The four locations along Fernandez Avenue (P13SCSB08 through P13SCSB11) also had higher concentrations of TPHd in the shallow samples (at surface, two and five feet.). Elevated TPHd was also detected at deeper depths (eight to twelve feet) in the downgradient direction on the south side of the former above ground storage features (P13SCGW11, and P13SCGW13). The soil and groundwater samples collected near and around the former above ground storage features and towards the north end of PRFTA 13 site showed only low to non-detect concentrations of TPHd. TPHd was not detected in samples collected near a concrete structure excavated in early 2005 as part of the validation efforts associated with the geophysical survey completed by Bobbit in 2004 (*Bobbit, 2004*).

5.2.2 Hydropunch Sampling

Sixteen HydroPunch groundwater samples were collected within the perched groundwater present at the site. TPHd concentrations ranged from 0.09 mg/l at P13SCGW04 to 650 mg/l at P13SCGW13 (Plate 4). Table 7 presents the TPHd results for each location. Hydrocarbon odors were noted during the investigation in borings P13SCGW10, P13SCGW11, P13SCGW13 P13SCGW14. A sheen was noted on groundwater sample collected from P13SCGW10.

5.3 Nature and Extent of Contamination

This section describes the nature and extent of elevated diesel concentrations in soil and groundwater.

5.3.1 Soil

During the most recent investigation (June 2005), TPHd was reported in four borings at concentrations greater than the soil protection screening level of 100 mg/kg (P13SCSB08, P13SCSB09, P13SCSB10, and P13SCSB11). Soil results from the most recent investigation are included in Table 6. Using the most recent soil data as well as historical data (Tables 1 through 6), MACTEC constructed a site map depicting the areas and depths of TPHd impacted soils above the soil protection screening level (Plate 4). This Plate depicts the impacted shallow soil areas (less than 5 feet bgs) from surface spills located near and south of the former dispenser islands, the impacted soil areas (0 to 10 feet bgs) present from the former pipelines, and the deeper impacted soils (8 to 12 feet bgs) located downgradient of the pipelines and dispensers.

As stated above, current data indicates three areas where TPHd is present in soil above the RWQCB Environmental Screening Level (ESL) of 100 mg/kg, and one area where visual evidence indicated the potential for TPHd above the ESL. The ESL for soil of 100 mg/kg was selected as a guide for site characterization purposes. The four areas of the site where TPHd impacted soil is present are described below:

1. Dispensing Area - Previous investigations have indicated that elevated diesel concentrations in soil at the dispensing area and immediately south of the dispensing area are limited to soil within 5 feet of the surface. The aerial extent of the shallow contamination is shown on Plate 3.
2. Former Pipelines – Results of sampling adjacent to pipelines at the dispensing area and southeast of the dispensing area indicate that elevated TPHd concentrations are present along the pipeline running along Fernandez Avenue from about 2 feet bgs at Boring P13SCSB08 to the water table (Plate 3)
3. Deeper Zone – Results of previous sampling downgradient from the dispensing area and pipeline indicate an area of deeper TPHd impacted soil ranging from about 8 to 12 feet bgs. It appears that this area of impacted soil is the result of transport within the perched groundwater and changes in water table elevation due to seasonal water level variations. Based on analytical results reported from the groundwater sample collected from P13SCGW13 and the soil sample collected at 11 feet bgs from P13SCGW11, this deeper zone of soil contamination may extend further south from the source area than depicted (Plate 4). It does not appear to extend to the southwest much past the fence based on the significantly lower TPHd concentration detected in groundwater at TFMW15.
4. Pad A – Although the concentrations collected in the soil sample were below the ESL, the results of the Hydro Punch sample indicate the potential for additional soil impacts.

5.3.2 Groundwater

TPHd was detected at concentrations greater than the groundwater ESL of 0.1 mg/l in all but three of the HydroPunch samples collected in June 2005. The samples that did not exceed the ESL of 0.1 mg/l were collected upgradient and cross-gradient from the suspected source area (P13SCGW01, P13SCGW03, and P13SCGW04). It should be noted that one upgradient location P13SCGW02 did contain TPHd at 0.16 mg/l, which is just above the ESL.

The highest TPHd concentrations were detected in samples collected downgradient of the suspected source area, and in the location of former Tank A. Downgradient concentrations ranged from a high of 650 mg/l to 0.12 mg/l. The lower concentrations were found in samples collected further downgradient, although some higher concentrations were also detected in the downgradient direction (P13SCGW08 and P13SCGW06 at 0.54 and 0.56 mg/l). It should be noted that there are other potential sources of contamination in the downgradient direction. The potential sources include an oil water separator, a washrack, and an oil drainage pit (Plate 3).

The highest groundwater result is suspect, as a duplicate sample collected at the same location at the same time was reported with a result more than forty times less than that reported for the original sample (15 mg/l versus 650 mg/l).

Plate 5 shows the location and extent of the groundwater contamination based on June 2005 HydroPunch data. As illustrated, the groundwater plume extends southwest from the assumed source area and the area around Tank Pad A.

6.0 CONCEPTUAL SITE MODEL

The following subsections describe the current site conceptual model, which is based on the data collected from this and previous investigations. Plate 6 presents a diagram of the site showing the potential source areas and potential migration pathways.

6.1 Potential Migration Pathways

Groundwater is the primary migration pathway for TPHd away from the source area as shown on Plate 6. The potential groundwater pathway, however, is currently incomplete because the shallow groundwater is not used by human receptors. No use of this shallow groundwater is expected in the future.

Results of previous sampling downgradient from the identified potential source areas (dispensing area and shallow pipelines) indicate an area of deeper TPHd impacted soil ranging from about 8 to 12 feet bgs. It appears that this impacted soil zone is the result of the transport within the perched groundwater and changes in water table elevation due to seasonal water level variations.

6.2 Potential Receptors

PRFTA 13 is currently an open field. No surface soil impact has been identified; therefore, no current exposure to humans has been identified. The potential for human exposure on this site is possible during the construction stages as construction workers excavate soil and come in contact with sub-surface soil contaminants currently in place. It is possible that impacts to ecological receptors that burrow into the ground could occur.

7.0 CONCLUSIONS AND RECOMMENDATIONS

7.1 Conclusions

Based on the analytical data collected in the Phase 1 (*USACHPPM, 2002a*), Phase 2 (*USACHPPM, 2002b*) and the June 2005 investigation the following conclusions concerning the distribution of diesel contamination in soil and groundwater be made:

Soil

- TPHd impacted shallow soil is present near the former dispensing area. This appears to be a source area for deeper soil impacts seen at the site.
- TPHd impacted soil is also present adjacent to former pipelines that run along the Fernandez Avenue.
- TPHd impacted soil is present at deeper depths (8 to 12 feet) in soil downgradient of the dispensing area. The presence of TPHd in soil at depth, but not in the shallow soils suggests that the TPHd migrated from the shallow soil downward to the perched groundwater lens where it was transported further downgradient of the source area. It is suspected that the seasonal variations in the water table resulted in a smear zone of diesel at the water table. The extent of the deeper contamination has not been fully characterized.

Groundwater

- THPd impacted groundwater is present at concentrations above the ESL of 0.1 mg/l from the northern portion of the former tank farm, south at least 800 feet from the suspected source area.
- The highest THPd concentrations were identified in HydroPunch locations downgradient from the suspected source area (P13SCGW13, P13SCGW10 and P13SCGW11) and from the sample collected at Pad A (P13SCGW14).
- It appears that THPd is being transported within the perched groundwater from the suspected source area in the downgradient direction.
- The results of lithologic sampling at this site indicate that groundwater occurs in a perched zone within the silty to clayey sands present at about 8 to 13 feet bgs. Soil beneath this layer was dry to moist based on sampling of the two 30 foot borings.

7.2 Recommendations

- Based on the results of this sampling program and previous sampling programs, removal of THPd impacted soil is recommended. A Corrective Action Plan will be submitted detailing the proposed removal action.
- Following removal of THPd impacted soil, a groundwater monitoring network should be installed to allow for monitoring of the groundwater on a quarterly basis to monitor the hydrocarbon concentrations in groundwater. It is anticipated that removal of the source area will result in declining concentrations of THPd in groundwater.

8.0 REFERENCES

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MACTEC Engineering and Consulting, Inc. (MACTEC), 2005a. *Sampling and Analysis Plan for Former Tank Farm (PRFTA 13), Parks Reserve Forces Training Area (RFTA), Dublin, California.* March 31.

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_____, 2002b. *Phase 2 Site Inspection No 38-EH-6665-03, Former Tank Farm (PRFTA 13), Parks Reserve Forces Training Area, Dublin, California.* October.

_____, 2003. *Draft Results of Environmental Sampling in the 187 –Acre Real Property Exchange, Camp Parks, Dublin (Alameda and Contra Costa Counties), California, USACHPPM Project No. 38-DH-003H-04.* October.

TABLES

Table 1. Summary of Analytical Results for Groundwater Monitoring Samples
U.S. Army Center for Health Promotion and Preventative Medicine
Phase 1 Investigation
PRFTA Site 13
Camp Parks
Dublin, California

Sample Location	Sample Date	TPH-D* ppb**	Fluorene	Penanthrene	Arsenic	Lead	VOCs
TFMW 1	5/20/2002	93 J	NA	NA	NA	NA	NA
TFMW 2	5/20/2002	74 J	NA	NA	NA	NA	NA
TFMW 3	5/20/2002	2,400	NA	NA	NA	NA	NA
TFMW 4	5/20/2002	260 J	NA	NA	NA	NA	NA
TFMW 5	5/20/2002	520	NA	NA	NA	NA	NA
TFMW 6	5/20/2002	320	NA	NA	NA	NA	NA
TFMW 7	5/20/2002	2,100	NA	NA	NA	NA	NA
TFMW 8	5/20/2002	1,100	NA	NA	NA	NA	NA
TFMW 9	5/20/2002	9,800	4.1	6.8	160	5.6	ND
TFMW 10	5/20/2002	120	NA	NA	NA	NA	NA

* EPA Method 8015B

**ESL for non-drinking water clean-up level is 640 ppb (TPH-D)

J Concentration is estimated

ND - Well was sampled for VOCs but no VOCs were detected.

Data source: U.S. Army Center for Health Promotion and Preventative Medicine.

Checked by SAT

Approved by BPF

Table 2. Summary of Analytical Results for Soil Samples
U.S. Army Center for Health Promotion and Preventative Medicine
Phase 1 Investigation
PRFTA Site 13
Camp Parks
Dublin, California

Sample Location	Sample Date	Sample Depth	TPH-D* ppm**
BH4B	5/16/2002	8 ft.bgs	5,300
BH9B	5/16/2002	8 ft.bgs	ND (15)
BH14B	5/17/2002	8 ft.bgs	ND (15)
BH20A	5/17/2002	4 ft.bgs	96
BH25B	5/18/2002	8 ft.bgs	ND (15)
BH26B	5/19/2002	8 ft.bgs	4,400
BH31B	5/19/2002	8 ft.bgs	11,000
BH35B	5/19/2002	8 ft.bgs	2,500
BH45B	5/20/2002	8 ft.bgs	4,200

* EPA Method 8015B

**ESL for non-drinking water clean-up level is 500 ppm (TPH-D)

ND(15) Not detected above reporting limit

Data source: U.S. Army Center for Health Promotion and Preventative Medicine.

Checked by B.S.T.

Approved by PPF

**Table 3. Summary of Analytical Results for Groundwater
Monitoring Samples
U.S. Army Center for Health Promotion and Preventative
Medicine
Phase 2 Investigation
PRFT Site 13
Dublin, California**

Sample Location	Sample Date	TPH-D* ppb***	SVOCs ppb**
TFMW 11	10/12/2002	53 J	
TFMW 12	10/13/2002	ND(110)	ND(10)
TFMW 13	10/13/2002	310	
TFMW 14	10/14/2002	350	
TFMW 15	10/14/2002	460	ND(10)

* EPA Method 8015B

** EPA Method 8270

*** ESL for non-drinking water cleanup level is 640 ppb (TPH-D)

J Concentration is estimated

ND(10) Not detected above reporting limit

Data source: U.S. Army Center for Health Promotion and Preventative Medicine.

Checked SAT

Approved BPF

Table 4. Summary of Analytical Results for Soil Samples
U.S. Army Center for Health Promotion and Preventative Medicine
Phase 2 Investigation
PRFT Site 13
Dublin, California

Sample Location	Sample Date	Sample Depth	TPH-D* ppm**
BH55C	10/13/2002	9.0 ft.bgs	ND(15)
BH56B	10/13/2002	5.5 ft.bgs	ND(14)
BH58A	10/13/2002	3.0 ft.bgs	ND(12)

* EPA Method 8015B

** ESL for non-drinking water cleanup level is 500 ppm (TPH-D)

ND(15) Not detected above reporting limit

Data source: U.S. Army Center for Health Promotion and Preventative Medicine.

Checked by SET

Approved by BPF

Table 5. Summary of Analytical Results for Soil Samples and Soil Stockpiles
PRFTA Site 13
Dublin, California

Sample Location	Sample Date	Sample Depth	TPH-D* ppm****	OIL & GREASE** ppm	VOC's***
1011019-A	10/19/2001	Trench-12.0 ft.bgs	470	84	ND
1011019-B	10/19/2001	Trench-8.0 ft.bgs	140	22	
1011019-C	10/19/2001	Trench-3.0 ft.bgs	35	ND	
1011019-D	10/19/2001	Trench-2.5 ft.bgs	7.4	1.8	
1011019-E	10/19/2001	Trench-2.5 ft.bgs	2.2	4.3	
1011101-A	11/1/2001	Trench-12.0 ft.bgs	17,000		
1011114-A	11/14/2001	NA	90		
1011114-B	11/14/2001	NA	130		
1011114-C	11/14/2001	NA	74		
1011114-D	11/14/2001	NA	32		
A-1,2,3,4 COMP	3/12/2004	NA	5.7		
B-1,2,3,4 COMP	3/12/2004	NA	ND(1.0)		
C-1,2,3,4 COMP	3/12/2004	NA	1.6		
D-1,2,3,4 COMP	3/12/2004	NA	4.3		
E-1,2,3,4 COMP	3/12/2004	NA	1.7		
F-1,2,3,4 COMP	3/12/2004	NA	110		
G-1,2,3,4 COMP	3/12/2004	NA	3.8		
H-1,2,3,4 COMP	3/12/2004	NA	1.5		

* Sample Depth in Fernandez Ave. sewer trench

** EPA Method 8015B

*** Volatile Organics by GC/MS

**** ESL for non-drinking water cleanup level is 500 ppm (TPH-D)

NA Not applicable; stockpile 4-point composite

ND Not detected above reporting limit

Checked by JAT

Approved by BPF

Table 6 Soil Analytical Results, June 2005
PRFTA 13 Site Investigation Report
Parks Reserve Forces Training Area
Dublin California

Date	Boring Number	Sample I.D.	Depth (feet)	TPH as Diesel (mg/kg)
6/3/2005	P13SCSB01	P13SCSB0100	1	<12
6/3/2005	P13SCSB01	P13SCSB0105	5	31
6/3/2005	P13SCSB01	P13SCSB0110	10	<12
6/3/2005	P13SCSB02	P13SCSB0201	1	3.4
6/3/2005	P13SCSB02	P13SCSB0205	5	3.6
6/3/2005	P13SCSB02	P13SCSB0210	10	<12
6/3/2005	P13SCSB03	P13SCSB0301	1	<14
6/3/2005	P13SCSB03	P13SCSB0305	5	<13
6/3/2005	P13SCSB03	P13SCSB0310	10	<12
6/3/2005	P13SCSB04	P13SCSB0400	1	<12
6/3/2005	P13SCSB04	P13SCSB0405	5	<14
6/3/2005	P13SCSB04	P13SCSB0410	10	<13
6/3/2005	P13SCSB04	P13SCSB0400R	Rinsate	0.10
6/3/2005	P13SCSB05	P13SCSB0501	1	6.0
6/3/2005	P13SCSB05	P13SCSB0505	5	<15
6/3/2005	P13SCSB05	P13SCSB0510	10	<16
6/3/2005	P13SCSB06	P13SCSB0601	1	93
6/3/2005	P13SCSB06	P13SCSB0605	5	5.0
6/3/2005	P13SCSB06	P13SCSB0610	10	5.9
6/3/2005	P13SCSB07	P13SCSB0700	1	3.7
6/3/2005	P13SCSB07	P13SCSB0705	5	<13
6/3/2005	P13SCSB07	P13SCSB0710	10	<12
6/3/2005	P13SCSB07	P13SCSB0700R	Rinsate	0.073
6/3/2005	P13SCSB08	P13SCSB0800	1	<13
6/3/2005	P13SCSB08	P13SCSB0802	2	120
6/3/2005	P13SCSB08	P13SCSB0805	5	100
6/3/2005	P13SCSB08	P13SCSB0810	10	2,500
6/3/2005	P13SCSB09	P13SCSB0900	1	320
6/3/2005	P13SCSB09	P13SCSB0902	2	3.3
6/3/2005	P13SCSB09	P13SCSB0905	5	2.5
6/3/2005	P13SCSB09	P13SCSB0910	10	<12
6/3/2005	P13SCSB10	P13SCSB1000	1	340
6/3/2005	P13SCSB10	P13SCSB1002	2	<11
6/3/2005	P13SCSB10	P13SCSB1005	5	<14
6/3/2005	P13SCSB10	P13SCSB1010	10	<13
6/3/2005	P13SCSB11	P13SCSB1100	1	61
6/3/2005	P13SCSB11	P13SCSB1102	2	52
6/3/2005	P13SCSB11	P13SCSB1105	5	150
6/3/2005	P13SCSB11	P13SCSB1110	10	<13
6/3/2005	P13SCSB12	P13SCSB1200	1	<13
6/3/2005	P13SCSB12	P13SCSB1205	5	<14
6/3/2005	P13SCSB12	P13SCSB1210	10	<14
6/3/2005	P13SCSB13	P13SCSB1300	1	7.2
6/3/2005	P13SCSB13	P13SCSB1305	5	<13
6/3/2005	P13SCSB13	P13SCSB1310	10	<13

Table 6 Soil Analytical Results, June 2005
PRFTA 13 Site Investigation Report
Parks Reserve Forces Training Area
Dublin California

Date	Boring Number	Sample I.D.	Depth (feet)	TPH as Diesel (mg/kg)
6/7/2005	P13SCGW1111	P13SCGW1111	11	4,200
6/7/2005	P13SCGW1408	P13SCGW1408	8	5.3

mg/kg = milligrams per kilogram
Reported at concentrations greater than the RWQCB Environmental
Bold Screening Level for TPH-d.
< Below the laboratory reporting limit.

Checked SAI

Approved BPF

Table 7 HydroPunch Analytical Results, June 2005
PRFTA 13 Site Investigation Report
Parks Reserve Forces Training Area
Dublin, California

Date	Boring Number	Sample I.D.	Screen Interval	TPH as Diesel (mg/l)
6/6/2005	P13SCGW01	P13SCGW01	12 to 16	0.060
6/6/2005	P13SCGW02	P13SCGW02	11 to 15	0.16
6/6/2005	P13SCGW03	P13SCGW03	11 to 15	0.10
6/6/2005	P13SCGW04	P13SCGW04	10 to 13	0.090
6/6/2005	P13SCGW05	P13SCGW05	11 to 16	0.26
6/6/2005	P13SCGW06	P13SCGW06	9 to 14	0.54
6/7/2005	P13SCGW07	P13SCGW07	12 to 15	0.12
6/7/2005	P13SCGW08	P13SCGW08	11 to 16	0.56
6/7/2005	P13SCGW09	P13SCGW09	11 to 16	0.63
6/7/2005	P13SCGW09D	P13SCGW09D	Dup.	0.14
6/7/2005	P13SCGW10	P13SCGW10	12 to 16	27
6/7/2005	P13SCGW11	P13SCGW11	12 to 16	24
6/7/2005	P13SCGW11	P13SCGW11	Rinsate	0.095
6/7/2005	P13SCGW12	P13SCGW12	12 to 16	0.55
6/7/2005	P13SCGW13	P13SCGW13	11 to 16	650
6/7/2005	P13SCGW13D	P13SCGW13D	Dup.	15
6/7/2005	P13SCGW14	P13SCGW14	11 to 16	13
6/7/2005	P13SCGW15	P13SCGW15	12 to 16	0.11
6/7/2005	P13SCGW16	P13SCGW16	12 to 16	0.14

mg/l=

milligrams per liter

Bold

Reported at concentrations greater than the RWQCB ESL

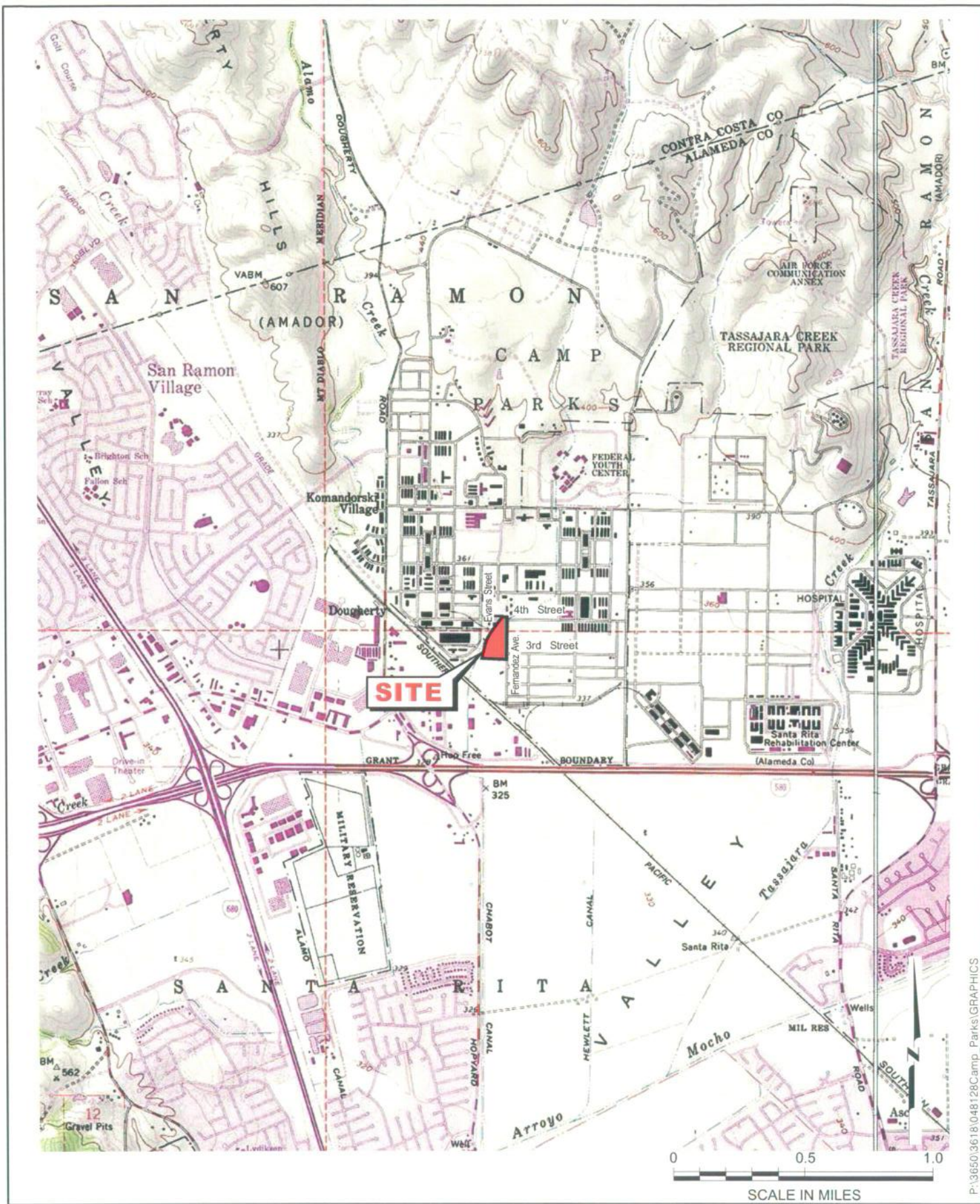
<

Below the laboratory reporting limit.

Checked SAT

Approved BPF

PLATES



P:\3650\3618\048128Camp_Parks\GRAPHICS



U.S. Army Combat Support Training Center,
Camp Parks
Site Investigation Report
PRFTA 13
Dublin, California

PLATE

1

DRAWN
CN

JOB NUMBER
3618048128 01

CHECKED
501

CHECKED DATE
02/06

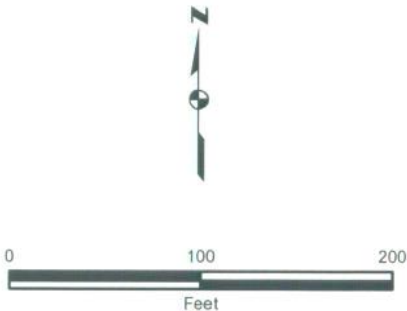
APPROVED
BPF

APPROVED DATE
4/17/06



EXPLANATION

- Temporary Monitoring Point
- Former Monitoring Point
- Proposed Well Installation
- Topographic Contour
(Contour Interval = 1 foot)
- Groundwater Elevation Contour
- Seasonal Wetland
- Building
- Concrete pad/ structure
- Fence
- Shallow contamination area (2002)
- Deep contamination area (2002)
- Manhole
- Soil Samples (2002)
- Soil Samples (2003)



DRAWN: TJH	PROJECT NO: 3618048128 04
ENGINEER:	SCALE: 1" = 100'
CHECKED: <i>SET</i>	APPROVED: <i>BPF</i>
DATE: 4/24/06	DATE: 4/2006



Site Investigation Report
PRFTA 13
Camp Parks
Dublin, California

PRFTA 13 Location Map Showing
Historical Sampling Points



EXPLANATION

TPH (diesel) results

- Soil sample with result (mg/kg)
- ▲ Soil sample with result (mg/kg)
- Previous soil sample location (2002)

< Indicates result is below detection limit

Note:
Multiple results per boring (Feet BGS):
1-foot/5-foot/10-foot or
1-foot/2-foot/5-foot/10-foot

- 0 - 10 FT BGS
- 0 - 5 FT BGS
- 8 - 10 FT BGS
- Potential area with TPH as diesel in soil greater than the ESL

- Fence
- Shallow contamination area
- Deep contamination area
- Building
- Concrete pad/structure
- Road
- Drainage ditch
- Seasonal wetland
- Topographic Contour (Contour Interval = 1 foot)
- Manhole

Former Above Ground Storage Tank Features

- Old trail
- Pad A
- Pad B
- Pipe
- Tank A
- Tank B
- Tank C
- Cement Pad
- Stockpile

DRAWN:	PROJECT NO: 3618048128 04
ENGINEER:	SCALE: AS SHOWN
CHECKED: SAT	APPROVED: BPF
DATE: 4/20/06	DATE: 1/2006

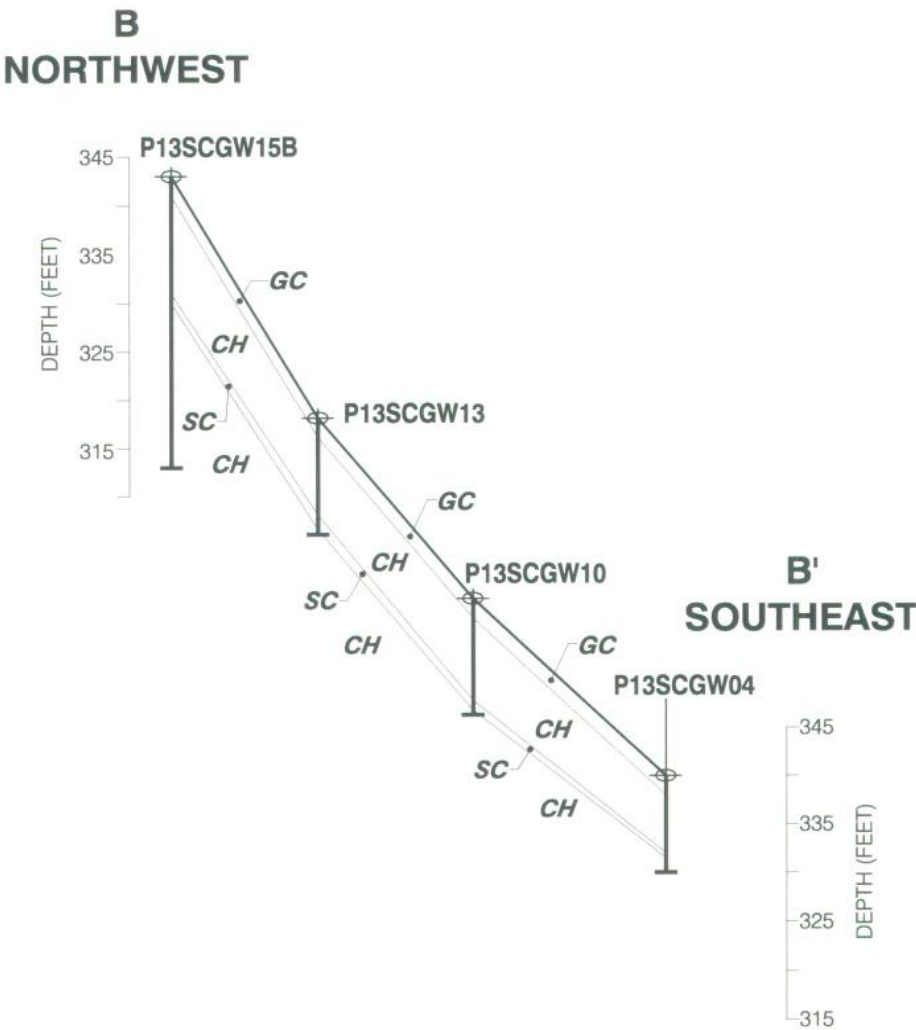
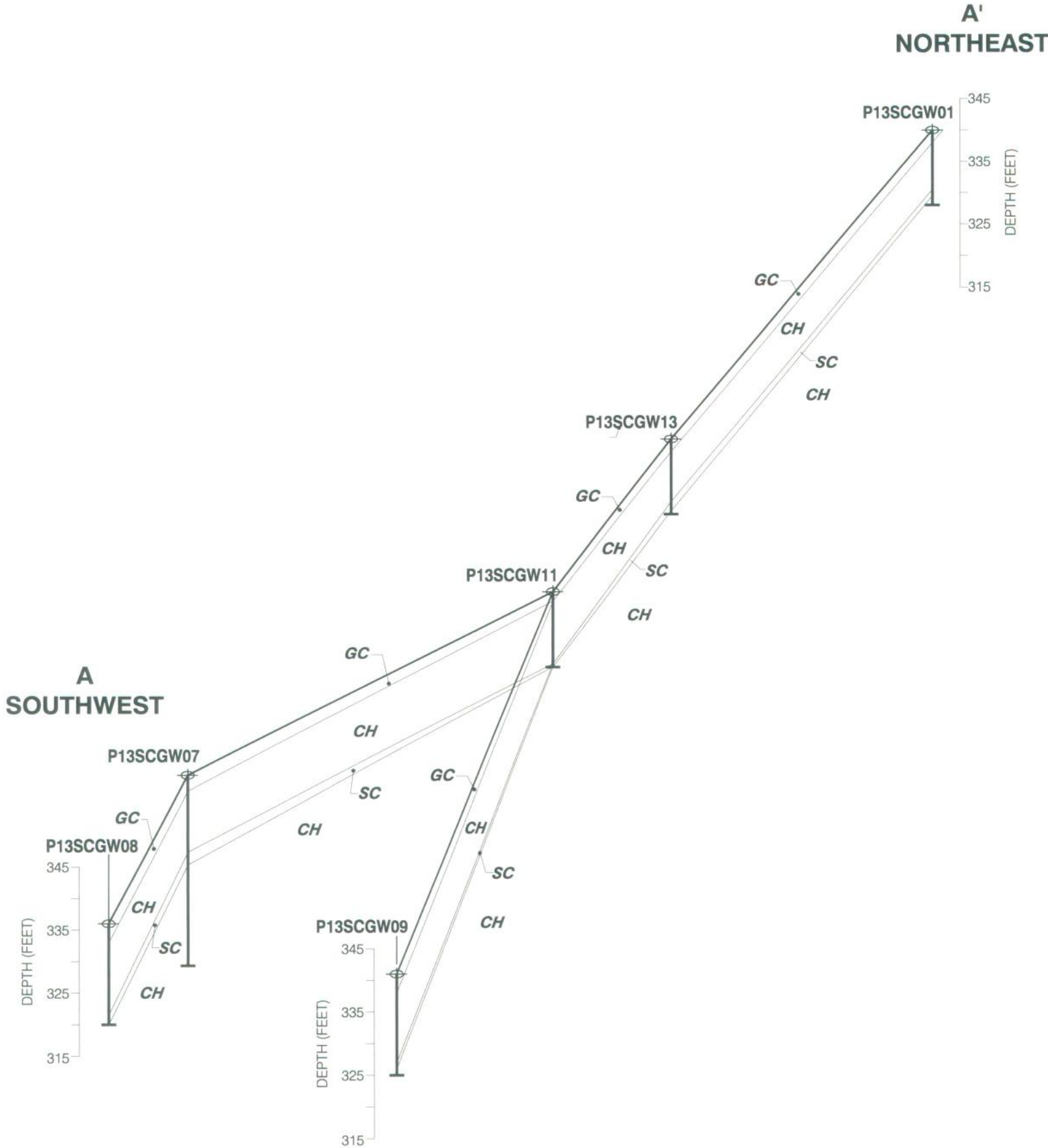


Site Investigation Report
PRFTA 13
Camp Parks
Dublin, California

Soil Sampling
Results

PLATE

3



HORIZONTAL SCALE: 1" = 100'
VERTICAL SCALE: 1" = 20'



Geologic Cross Sections
Camp Parks
Site Investigation Report
Former Tank Farm (PRFTA 13)
Dublin, California

PLATE

5

DRAWN
CN

JOB NUMBER
3618048128 02

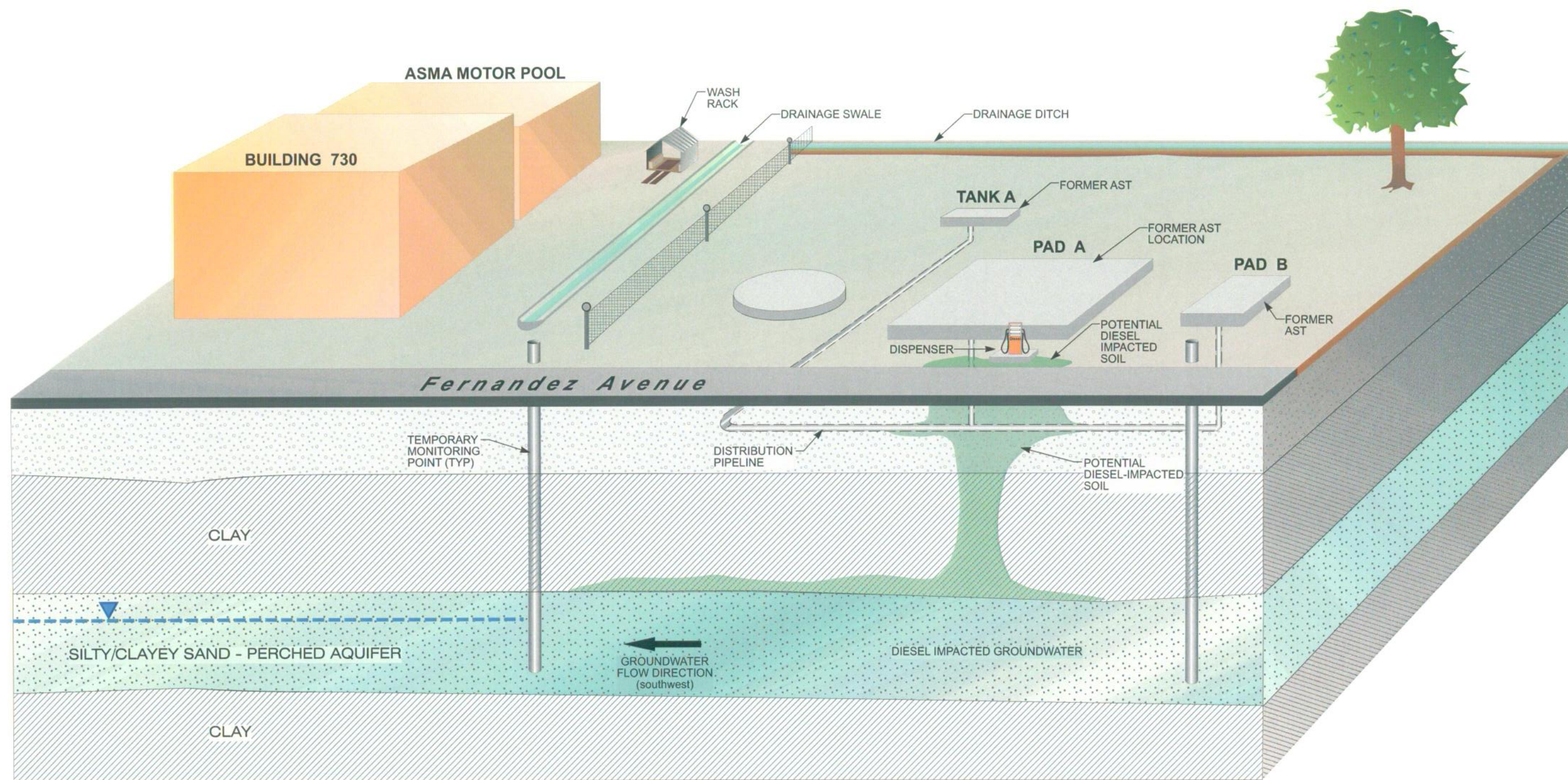
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JAT

CHK'D DATE
07/05

APPROVED
BIRK

APPR'D DATE
4/2/06

3618048128001 DWG 0
20060119.1459



NOTE: FOR ILLUSTRATION PURPOSES - NOT TO SCALE

EXPLANATION

- WATER TABLE
- POTENTIAL DIESEL IMPACTED SOIL

MACTEC

Conceptual Site Model
Site Investigation Report
Former Tank Farm (PRFTA 13)
U.S. Army Combat Support Training Center
Dublin, California

PLATE

6

DRAWN CN	JOB NUMBER 3618048128 02	CHECKED SCT	CHECKED DATE 02/06	APPROVED BPF	APPROVED DATE 4/12/06
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P:\3650\3618\048128Camp_Parks\GRAPHICS

APPENDIX A

BORING LOG CLEARANCE RECORDS



Harding ESE
A MACTEC COMPANY

RESULTS AND INSTRUMENTATION

GROUND PENETRATING RADAR (GPR)

SIR-3 ☒

SIR-7 ☐

SIR-8 ☐

SIR-10 ☐

Antenna 500 MHz

Range 60 m

Sensitivity -

Filter -

Taped? Y ☐ N ☒

Graphical Record? Y ☒ N ☐

Antenna -

Range -

Sensitivity -

Filter -

Taped? Y ☐ N ☐

Graphical Record? Y ☐ N ☐

Results Buried objects imaged? Y (N) Other anomalous reflections? Y (N)

ELECTROMAGNETICS (EM)

Mode:

In-Phase ☐

Conductivity ☐

Background Conductivity ☐ mS/m (mmhos/m)

Results Buried metal detected? Y N Other anomalous readings? Y N

PIPE & CABLE LOCATOR RD-400 ☒ RD-600 ☐ Other ☐

Mode: P ☒ R ☒ Applied Signal, Direct Connect ☐ Applied Signal, Induced ☒

Results Underground utilities detected near boring/trench location? Y (N)

PIPE & CABLE LOCATOR (M-Scope)

Results Buried metal detected? Y (N)

Underground utilities detected near boring/trench location? Y (N)

MAGNETOMETER

Schonstedt ☐

Other ☐

Results Buried metal detected? Y N



Harding ESE
A MACTEC COMPANY

BOREHOLE CLEARANCE RECORD

Client CAMP PARKS

Project No. 361504 8/28 07

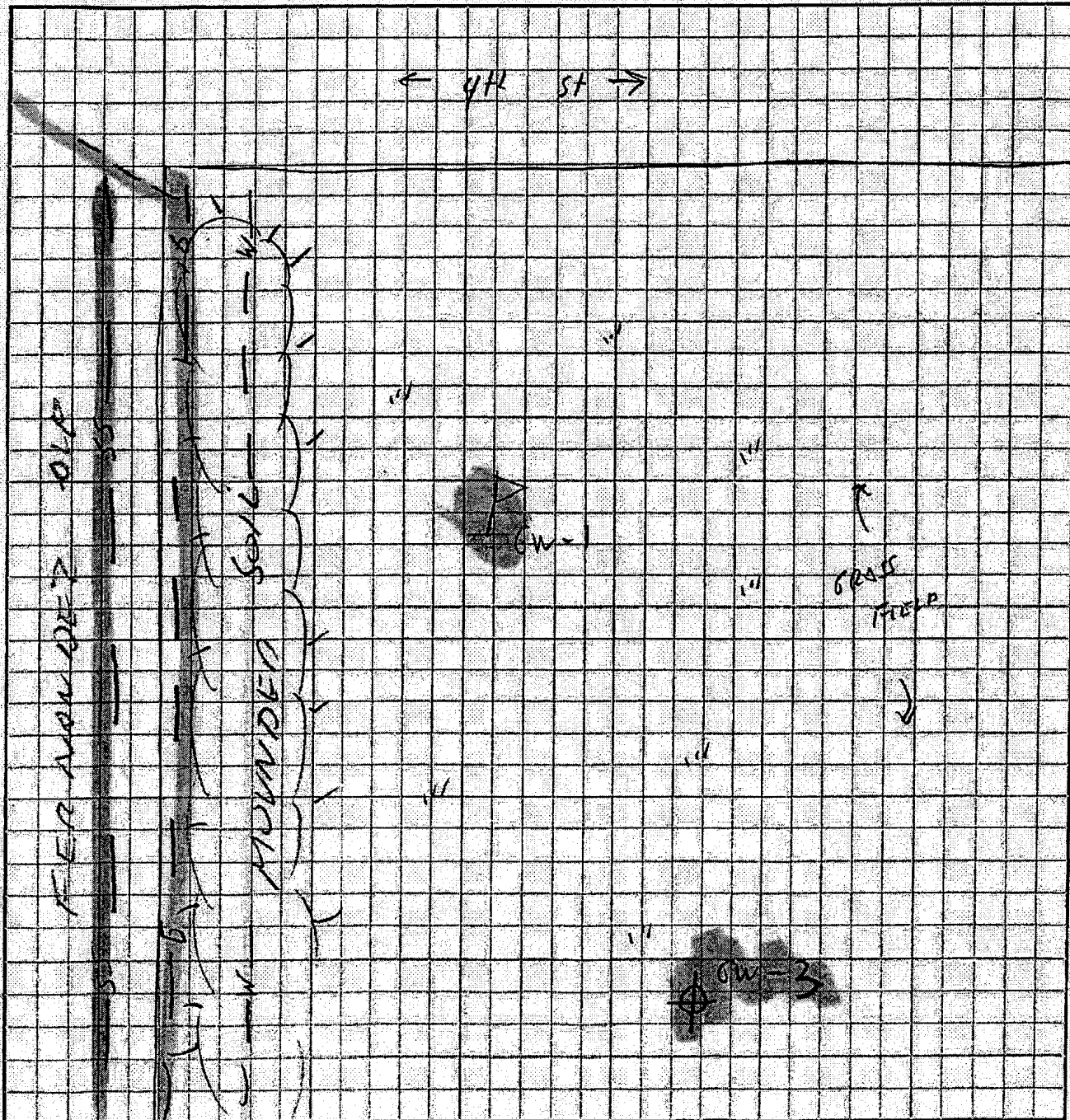
Location Dublin CA

Date 5/18/05 Time 1730

Borehole/Well I.D. GW-1, GW-3

Operator JWNS

Sketch Map



0 30
Feet





Harding ESE
A MACTEC COMPANY

RESULTS AND INSTRUMENTATION

GROUND PENETRATING RADAR (GPR)

SIR-3 ☒ SIR-7 _____ SIR-8 _____ SIR-10 _____

Antenna 500 MHz
Range 60 m
Sensitivity m
Filter m

Taped? Y ☒ N ☒
Graphical Record? Y ☒ N ☒

Antenna _____
Range _____
Sensitivity _____
Filter _____

Taped? Y _____ N _____
Graphical Record? Y _____ N _____

Results Buried objects imaged? (Y) N Other anomalous reflections? Y (N)

ELECTROMAGNETICS (EM)

Mode: In-Phase _____ Conductivity _____

Background Conductivity _____ mS/m (mmhos/m)

Results Buried metal detected? (Y) N Other anomalous readings? Y (N)

PIPE & CABLE LOCATOR RD-400 ☒ RD-600 _____ Other _____

Mode: P L R L Applied Signal, Direct Connect _____ Applied Signal, Induced ☒

Results Underground utilities detected near boring/trench location? (Y) N

Weak signal from narrow alignment
possible DEAD FO.

PIPE & CABLE LOCATOR (M-Scope)

Results Buried metal detected? (Y) (N)?

Underground utilities detected near boring/trench location? (Y) (N)?

BROAD ANOMALY - POSSIBLY ASSOCIATED w/
DEAD FO or other substructure

MAGNETOMETER Schonstedt _____ Other _____

Results Buried metal detected? Y (N)

BOREHOLE CLEARANCE RECORD

Client USAEC

Project No. 3618 04 8125 02

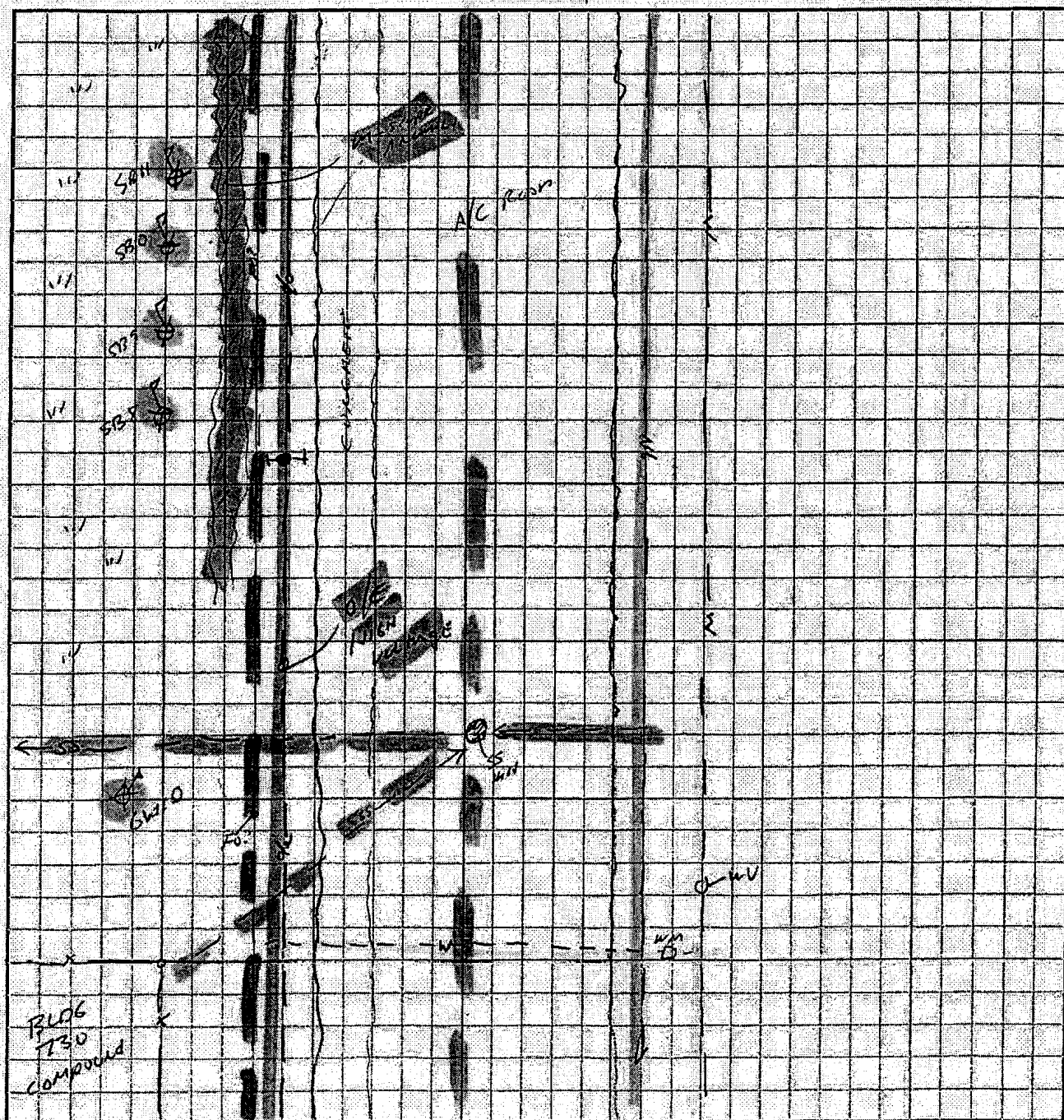
Location CAMP PARKS, Dublin CA

Date 5/18/05 Time 1630

Borehole/Well I.D. SB-8 → SB-11
GW 1.0

Operator Paul

Sketch Map



0 20
Feet





RESULTS AND INSTRUMENTATION

GROUND PENETRATING RADAR (GPR)

SIR-3 ☒ SIR-7 ☐ SIR-8 ☐ SIR-10 ☐

Antenna 500 MHz
Range 60 m
Sensitivity M
Filter M

Antenna _____
Range _____
Sensitivity _____
Filter _____

Taped? Y ☐ N ☒

Graphical Record? Y ☒ N ☐

Taped? Y ☐ N ☐

Graphical Record? Y ☐ N ☐

Results Buried objects imaged? ☒ N Other anomalous reflections? ☒ N

Substructure near GW-13.
Possible SS not imaged (too deep) -
inferred alignments based on physical
FEATURES (shown on sketch map)

ELECTROMAGNETICS (EM)

Mode: In-Phase _____ Conductivity _____
Background Conductivity _____ mS/m (mmhos/m)

Results Buried metal detected? Y ☐ N ☒ Other anomalous readings? Y ☐ N ☒

NOT 6511

PIPE & CABLE LOCATOR RD-400 ☒ RD-600 ☐ Other ☐

Mode: P ☒ R ☒ Applied Signal, Direct Connect ☐ Applied Signal, Induced ☒

Results Underground utilities detected near boring/trench location? Y ☐ N ☒

PIPE & CABLE LOCATOR (M-Scope)

Results Buried metal detected? ☒ Y ☐ N

Underground utilities detected near boring/trench location? Y ☒ N

METALLIC SUBSTRUCTURE DETECTED NEAR GW-13,
Location moved ~ 3' north for additional
CLEARANCE

MAGNETOMETER Schonstedt _____ Other _____

Results Buried metal detected? Y ☐ N ☐



RESULTS AND INSTRUMENTATION

GROUND PENETRATING RADAR (GPR)

SIR-3 ☒ SIR-7 ☐ SIR-8 ☐ SIR-10 ☐

Antenna 500MHz
Range 60ms
Sensitivity
Filter

Antenna
Range
Sensitivity
Filter

Taped? Y ☐ N ☒

Graphical Record? Y ☐ N ☒

Taped? Y ☐ N ☐

Graphical Record? Y ☐ N ☐

Results Buried objects imaged? Y ☒ Other anomalous reflections? Y ☒

ELECTROMAGNETICS (EM)

Mode: In-Phase Conductivity

Background Conductivity mS/m (mmhos/m)

Results Buried metal detected? Y ☒ Other anomalous readings? Y ☐

PIPE & CABLE LOCATOR RD-400 ☒ RD-600 ☐ Other ☐

Mode: P ☒ R ☒ Applied Signal, Direct Connect Applied Signal, Induced ☒

Results Underground utilities detected near boring/trench location? Y ☒

PIPE & CABLE LOCATOR (M-Scope)

Results Buried metal detected? Y ☒

Underground utilities detected near boring/trench location? Y ☐

MAGNETOMETER

Schonstedt ☒ Other

Results Buried metal detected? Y ☒



Harding ESE
A MACTEC COMPANY

BOREHOLE CLEARANCE RECORD

Client USAEC

Project No. 361804 8125 02

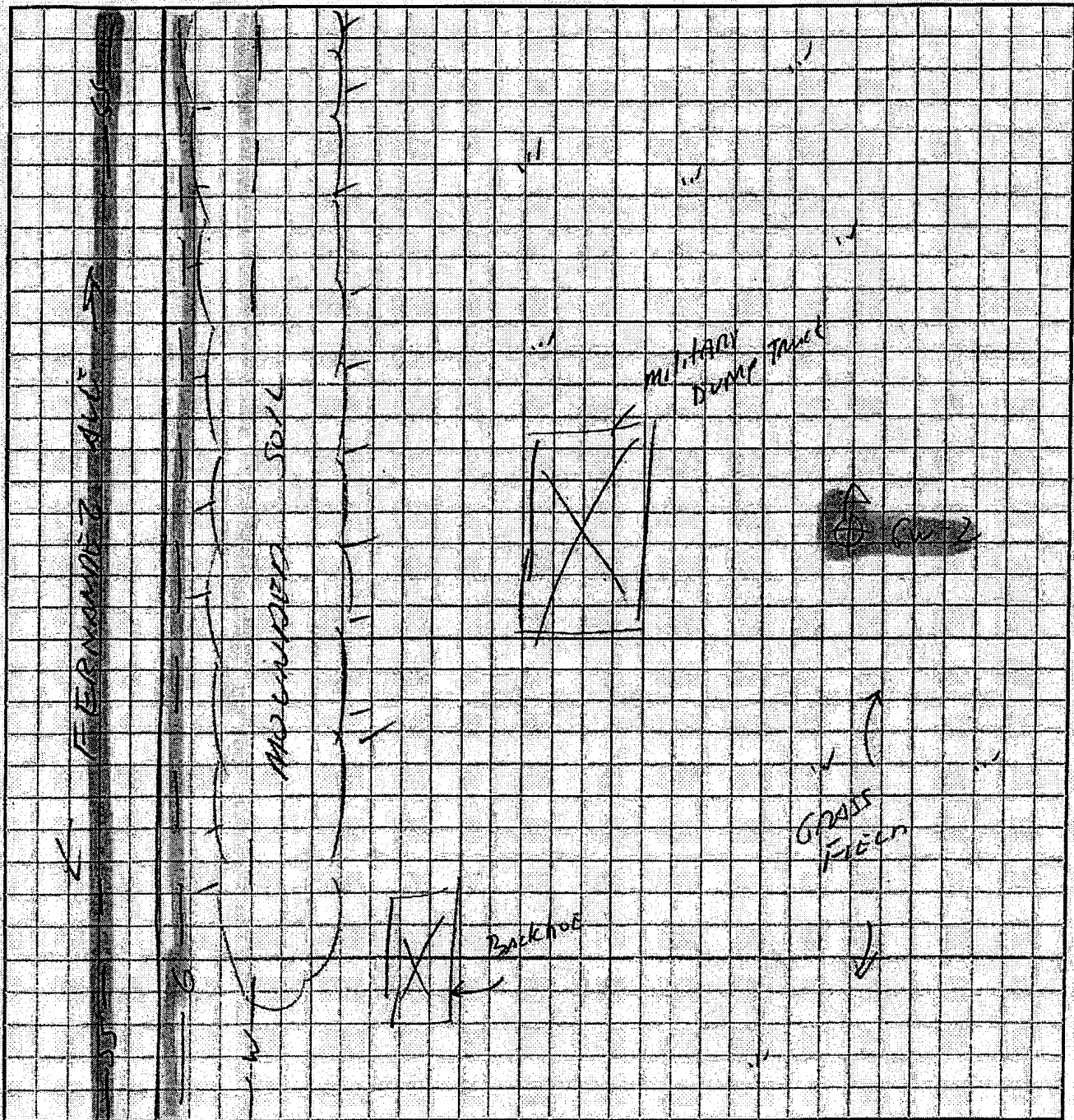
Location Dublin CA

Date 5/18/05 Time 1700

Borehole/Well I.D. GW-2

Operator POW

Sketch Map



0 30
Feet





RESULTS AND INSTRUMENTATION

GROUND PENETRATING RADAR (GPR)

SIR-3 ☒ SIR-7 ☐ SIR-8 ☐ SIR-10 ☐

Antenna 500 MHz
Range 6000
Sensitivity 10
Filter 10

Antenna _____
Range _____
Sensitivity _____
Filter _____

Taped? Y ☐ N ☒
Graphical Record? Y ☒ N ☐

Taped? Y ☐ N ☐
Graphical Record? Y ☐ N ☐

Results Buried objects imaged? Y ☒ N ☐ Other anomalous reflections? Y ☒ N ☐

ELECTROMAGNETICS (EM)

Mode: In-Phase _____ Conductivity _____
Background Conductivity _____ mS/m (mmhos/m)

Results Buried metal detected? Y ☐ N ☐ Other anomalous readings? Y ☐ N ☐

NOT USED

PIPE & CABLE LOCATOR RD-400 ☒ RD-600 ☐ Other ☐

Mode: P ☒ R ☒ Applied Signal, Direct Connect ☐ Applied Signal, Induced ☒

Results Underground utilities detected near boring/trench location? Y ☒ N ☐

PIPE & CABLE LOCATOR (M-Scope)

Results Buried metal detected? Y ☐ N ☐

Underground utilities detected near boring/trench location? Y ☒ N ☐

MAGNETOMETER

Schonstedt _____ Other _____

Results Buried metal detected? Y ☐ N ☐

NOT USED

BOREHOLE CLEARANCE RECORD

Client USACE

Project No. 3618 04 8125

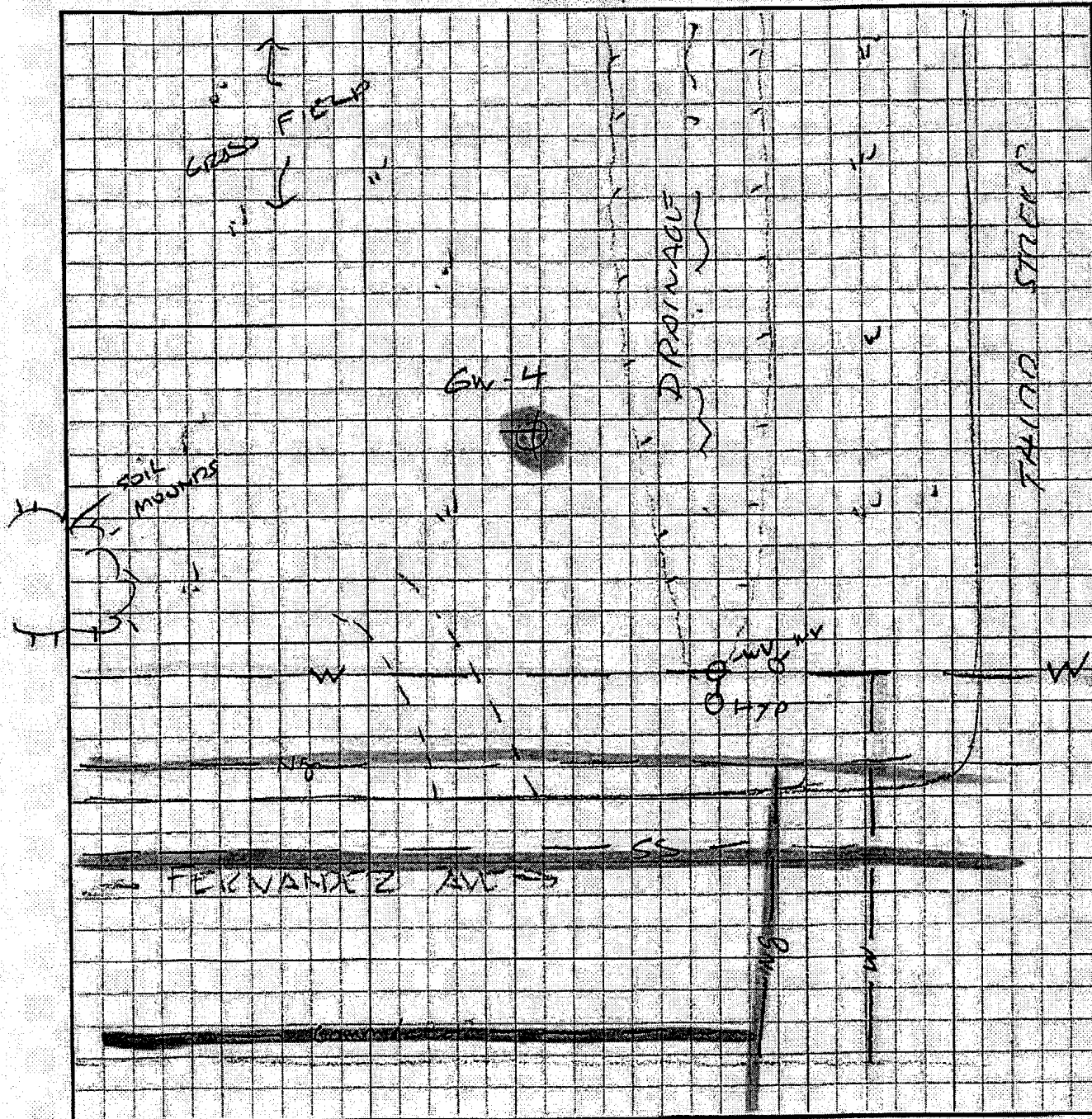
Location CAMP PARKS, DUBLIN CA

Date 5/19/05 Time 1000

Borehole/Well I.D. GW-4

Operator RWS

Sketch Map



← N

0 20
Feet
(approx)



Harding ESE
A MACTEC COMPANY

RESULTS AND INSTRUMENTATION

GROUND PENETRATING RADAR (GPR)

SIR-3 ☒

SIR-7 ☐

SIR-8 ☐

SIR-10 ☐

Antenna 50 MHz
Range 60 AS
Sensitivity M
Filter AN

Taped? Y ☐ N ☒
Graphical Record? Y ☒ N ☐

Antenna _____
Range _____
Sensitivity _____
Filter _____

Taped? Y ☐ N ☐
Graphical Record? Y ☐ N ☐

Results Buried objects imaged? (Y) N Other anomalous reflections? Y (N)

ELECTROMAGNETICS (EM)

Mode:

In-Phase ☐

Conductivity ☐

Background Conductivity _____ mS/m (mmhos/m)

Results Buried metal detected? Y ~~N~~ Other anomalous readings? Y N

NOT USED - proximity to BLRG

PIPE & CABLE LOCATOR RD-400 ☒ RD-600 ☐ Other ☐

Mode: P ☒ R ☐ Applied Signal, Direct Connect ☒ Applied Signal, Induced ☐

Results Underground utilities detected near boring/trench location? (Y) N

ELECT / CABLE LINE DETECTED EAST OF
6W-05 AS SHOWN ON SITE SKETCH

PIPE & CABLE LOCATOR (M-Scope)

Results Buried metal detected? (Y) N

Underground utilities detected near boring/trench location? (Y) N

AS SHOWN

MAGNETOMETER

Schonstedt ☐ Other ☐

Results Buried metal detected? Y ~~N~~



Client USAEC

Project No. 3618 04 8125 02

Location CAMP PARKS, Dublin CA

Date 5/19/05 Time 0715

Borehole/Well I.D. *6w-05*

Operator *ms*

[illegible]

A horizontal number line with arrows at both ends. The number 0 is written at the left end, and the number 20 is written at the right end. Below the number line, a horizontal bracket spans the entire length from 0 to 20. Underneath this bracket, the word "Feet" is written in a bold, serif font.

$$N \rightarrow$$



Harding ESE
A MACTEC COMPANY

RESULTS AND INSTRUMENTATION

GROUND PENETRATING RADAR (GPR)

SIR-3 ☒

SIR-7 ☐

SIR-8 ☐

SIR-10 ☐

Antenna 500 MHz
Range 60 W
Sensitivity M
Filter rh

Taped? Y ☐ N ☒

Graphical Record? Y ☒ N ☐

Antenna _____
Range 3 _____
Sensitivity _____
Filter _____

Taped? Y ☐ N ☐

Graphical Record? Y ☐ N ☐

Results Buried objects imaged? (Y) N Other anomalous reflections? Y (N)

ELECTROMAGNETICS (EM)

Mode:

In-Phase ☐

Conductivity ☐

Background Conductivity _____ mS/m (mmhos/m)

Results Buried metal detected? Y N Other anomalous readings? Y N

BL126

NOT USED - proximal to

PIPE & CABLE LOCATOR RD-400 ☒ RD-600 ☐ Other ☐

Mode: P ☒ RL ☐ Applied Signal, Direct Connect ☒ Applied Signal, Induced ☒

Results Underground utilities detected near boring/trench location? (Y) N

SEVERAL NEARBY UTILITIES NOT DETECTED AS SHOWN ON SKETCH MAP

PIPE & CABLE LOCATOR (M-Scope)

Results Buried metal detected? (Y) N

Underground utilities detected near boring/trench location? (Y) N

AS ABOVE

MAGNETOMETER

Schonstedt ☐

Other ☐

Results Buried metal detected? Y (N)

BOREHOLE CLEARANCE RECORD

Client USAEC

Project No. 3618 WE125 02

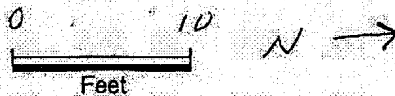
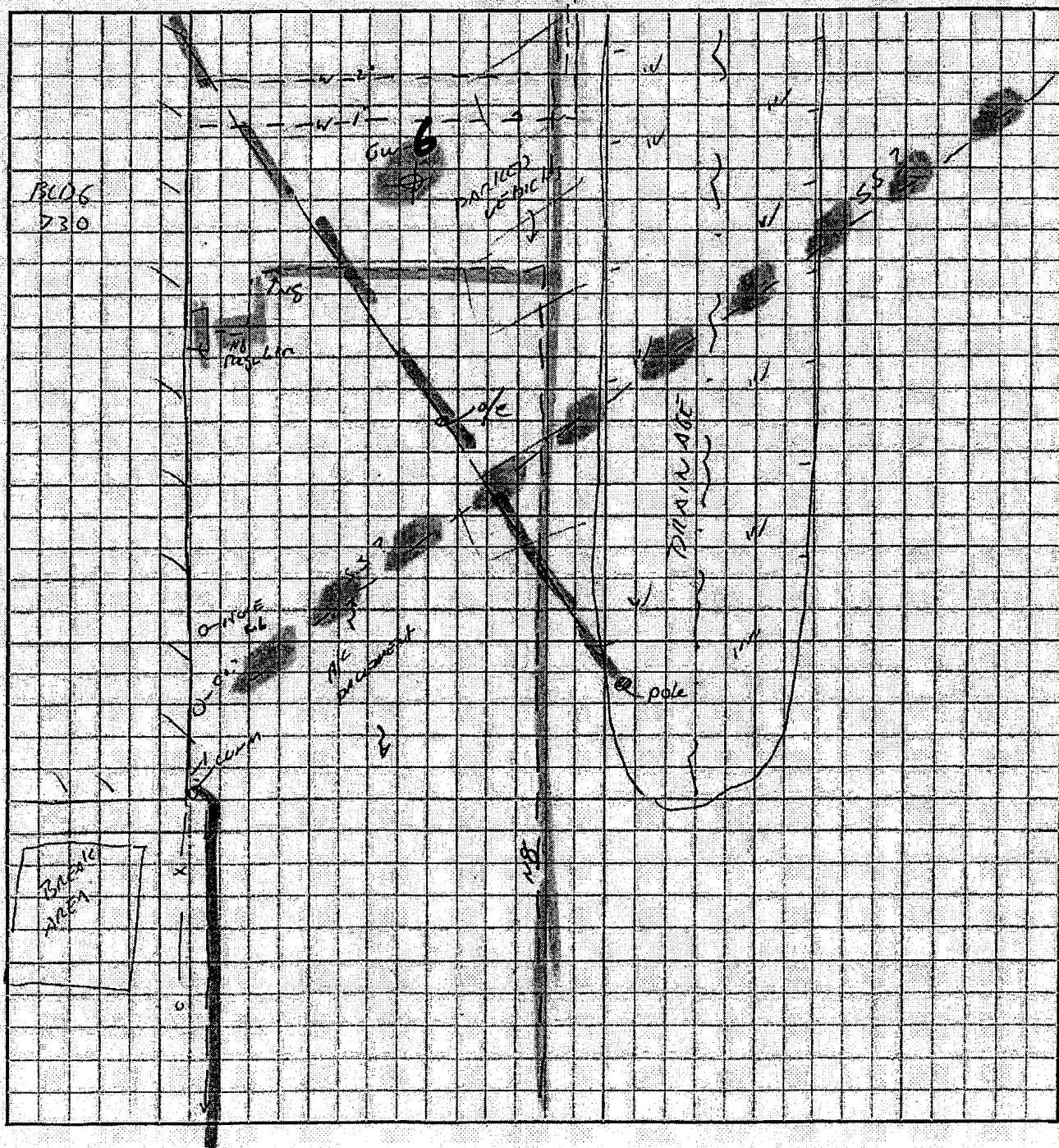
Location CAMP PARKS, Dublin CA

Date 5/19/05 Time 0815

Borehole/Well I.D. GW-6

Operator Rus

Sketch Map





RESULTS AND INSTRUMENTATION

GROUND PENETRATING RADAR (GPR)

SIR-3 ☒SIR-7 ☐SIR-8 ☐SIR-10 ☐

Antenna 500 MHz
Range 60m
Sensitivity 25
Filter 20

Antenna _____
Range _____
Sensitivity _____
Filter _____

Taped? Y ☐ N ☒
Graphical Record? Y ☐ N ☒

Taped? Y ☐ N ☐
Graphical Record? Y ☐ N ☐

Results Buried objects imaged? Y (N) Other anomalous reflections? Y (N)

ELECTROMAGNETICS (EM)

Mode:

In-Phase ☐Conductivity ☐

Background Conductivity _____ mS/m (mmhos/m)

Results Buried metal detected? Y (N) Other anomalous readings? Y (N)

air used proximity to vehicle

PIPE & CABLE LOCATOR RD-400 ☒ RD-600 ☐ Other ☐

Mode: P ☐ R ☒ Applied Signal, Direct Connect ☐ Applied Signal, Induced ☒

Results Underground utilities detected near boring/trench location? (Y) N

N, NG, SS SS shown on sketch map

PIPE & CABLE LOCATOR (M-Scope)

Results Buried metal detected? Y (N)

Underground utilities detected near boring/trench location? (Y) N

N, NG, SS SS shown on sketch map

MAGNETOMETER

Schonstedt ☐ Other ☐

Results Buried metal detected? Y (N)

BOREHOLE CLEARANCE RECORD

Client USAE

Project No. 3615 04 8125 02

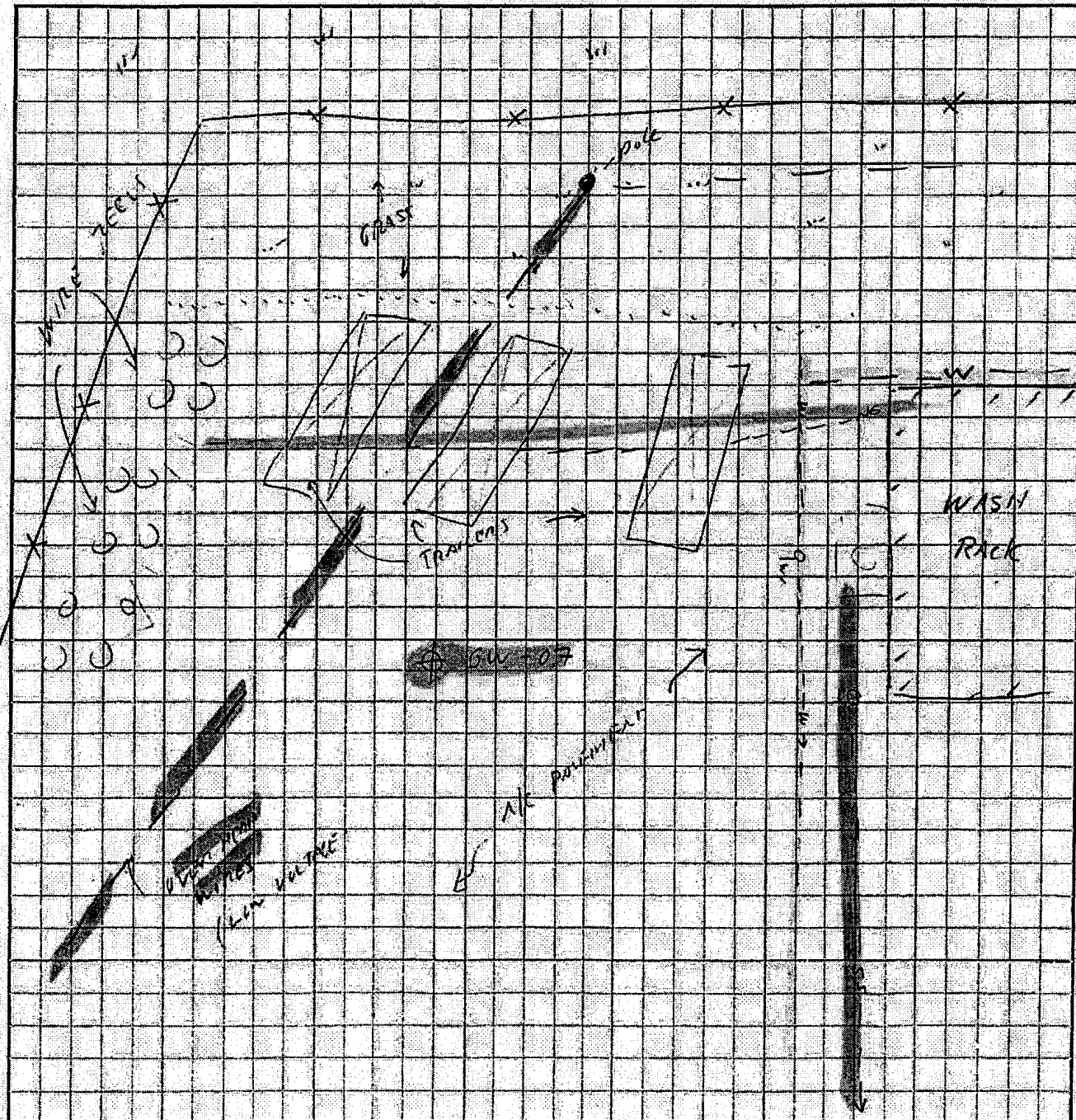
Location CAMP PARKS, Dublin CA

Date 5/19/05 Time 0645

Borehole/Well I.D. GW -07

Operator Paul

Sketch Map



0 30
Feet
(approx)





Harding ESE
A MACTEC COMPANY

RESULTS AND INSTRUMENTATION

GROUND PENETRATING RADAR (GPR)

SIR-3 ☒

SIR-7 ☐

SIR-8 ☐

SIR-10 ☐

Antenna 300 MHz

Range 60 M

Sensitivity 11

Filter 11

Taped? Y ☐ N ☒

Graphical Record? Y ☒ N ☐

Antenna ☐

Range ☐

Sensitivity ☐

Filter ☐

Taped? Y ☐ N ☐

Graphical Record? Y ☐ N ☐

Results Buried objects imaged? Y ☒ N ☐ Other anomalous reflections? Y ☒ N ☐

ELECTROMAGNETICS (EM)

Mode:

In-Phase ☐

Conductivity ☐

Background Conductivity ☐ mS/m (mmhos/m)

Results Buried metal detected? Y ☐ N ☒ Other anomalous readings? Y ☐ N ☒

NOT USED - proximity to chain-link fence & TRENCH

PIPE & CABLE LOCATAOR RD-400 ☒ RD-600 ☐ Other ☐

Mode: P ☒ R ☒ Applied Signal, Direct Connect ☐ Applied Signal, Induced ☒

Results Underground utilities detected near boring/trench location? Y ☒ N ☐

PIPE & CABLE LOCATAOR (M-Scope)

Results Buried metal detected? Y ☒ N ☐

Underground utilities detected near boring/trench location? Y ☒ N ☐

MAGNETOMETER

Schonstedt ☐

Other ☐

Results Buried metal detected? Y ☐ N ☒

BOREHOLE CLEARANCE RECORD

Client USAEC

Project No. 3618048128 02

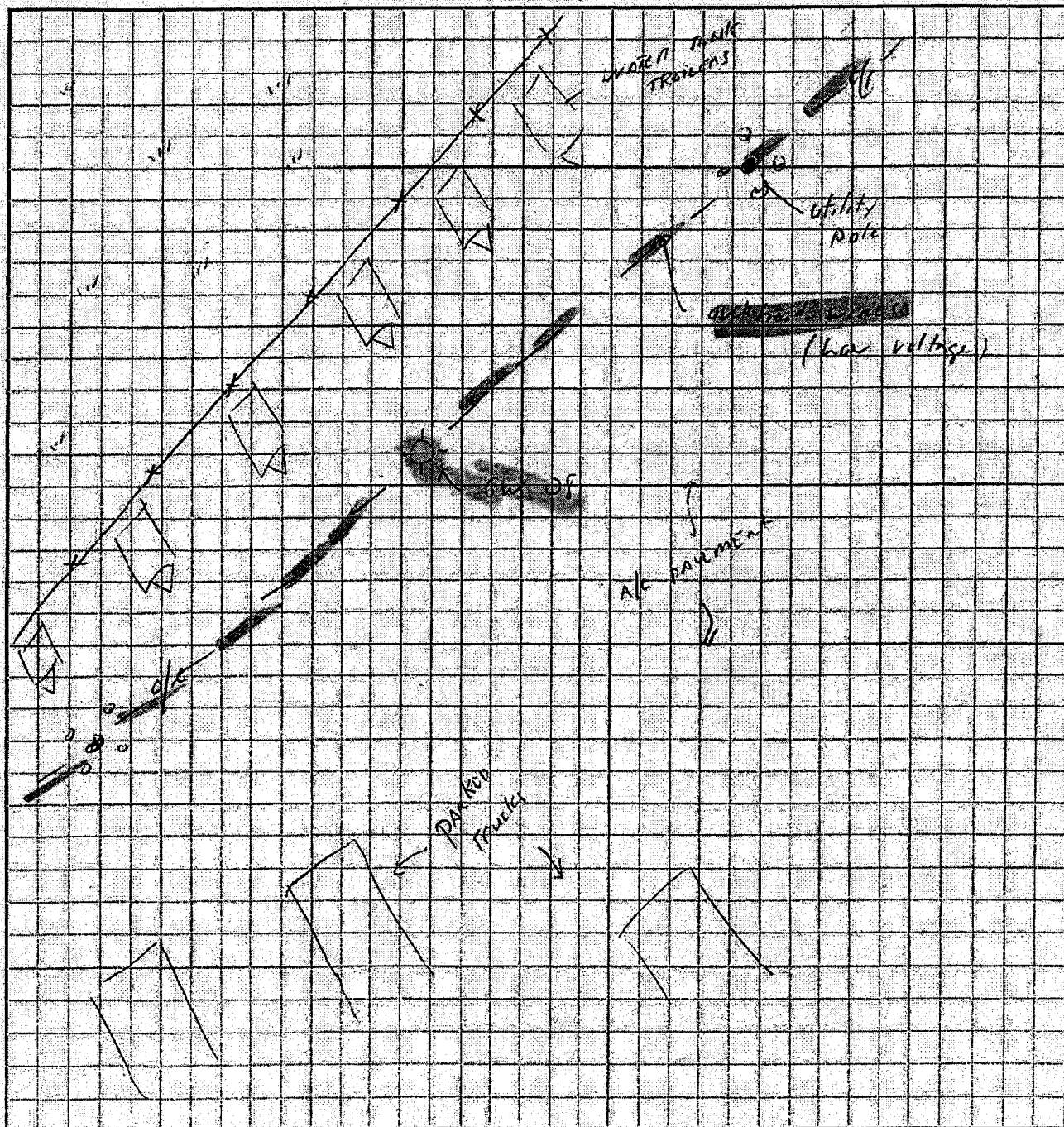
Location CAMP PARKS IDUBLA CA

Date 5/19/05 Time 0645

Borehole/Well I.D. 6W-03

Operator Paul

Sketch Map



0 20
Feet



RESULTS AND INSTRUMENTATION

GROUND PENETRATING RADAR (GPR)

SIR-3 ☒

SIR-7 ☐

SIR-8 ☐

SIR-10 ☐

Antenna 500 MHz
Range 600
Sensitivity M
Filter N

Taped? Y ☐ N ☒
Graphical Record? Y ☒ N ☐

Antenna _____
Range _____
Sensitivity _____
Filter _____

Taped? Y ☐ N ☐
Graphical Record? Y ☐ N ☐

Results Buried objects imaged? Y (N) Other anomalous reflections? Y (N)

ELECTROMAGNETICS (EM)

Mode:

In-Phase _____

Conductivity _____

Background Conductivity _____ mS/m (mmhos/m)

Results Buried metal detected? Y N Other anomalous readings? Y N

NOT USED - proximity to
BLDG & vehicle

PIPE & CABLE LOCATOR RD-400 ☒ RD-600 ☐ Other ☐

Mode: P ☒ R ☒ Applied Signal, Direct Connect ☐ Applied Signal, Induced ☒

Results Underground utilities detected near boring/trench location? Y (N)

PIPE & CABLE LOCATOR (M-Scope)

Results Buried metal detected? Y (N)

Underground utilities detected near boring/trench location? Y (N)

MAGNETOMETER

Schonstedt ☒

Other ☐

Results Buried metal detected? ~~Y~~ N



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A MACTEC COMPANY

BOREHOLE CLEARANCE RECORD

Client USACE

Project No. 3618 04 8125 02

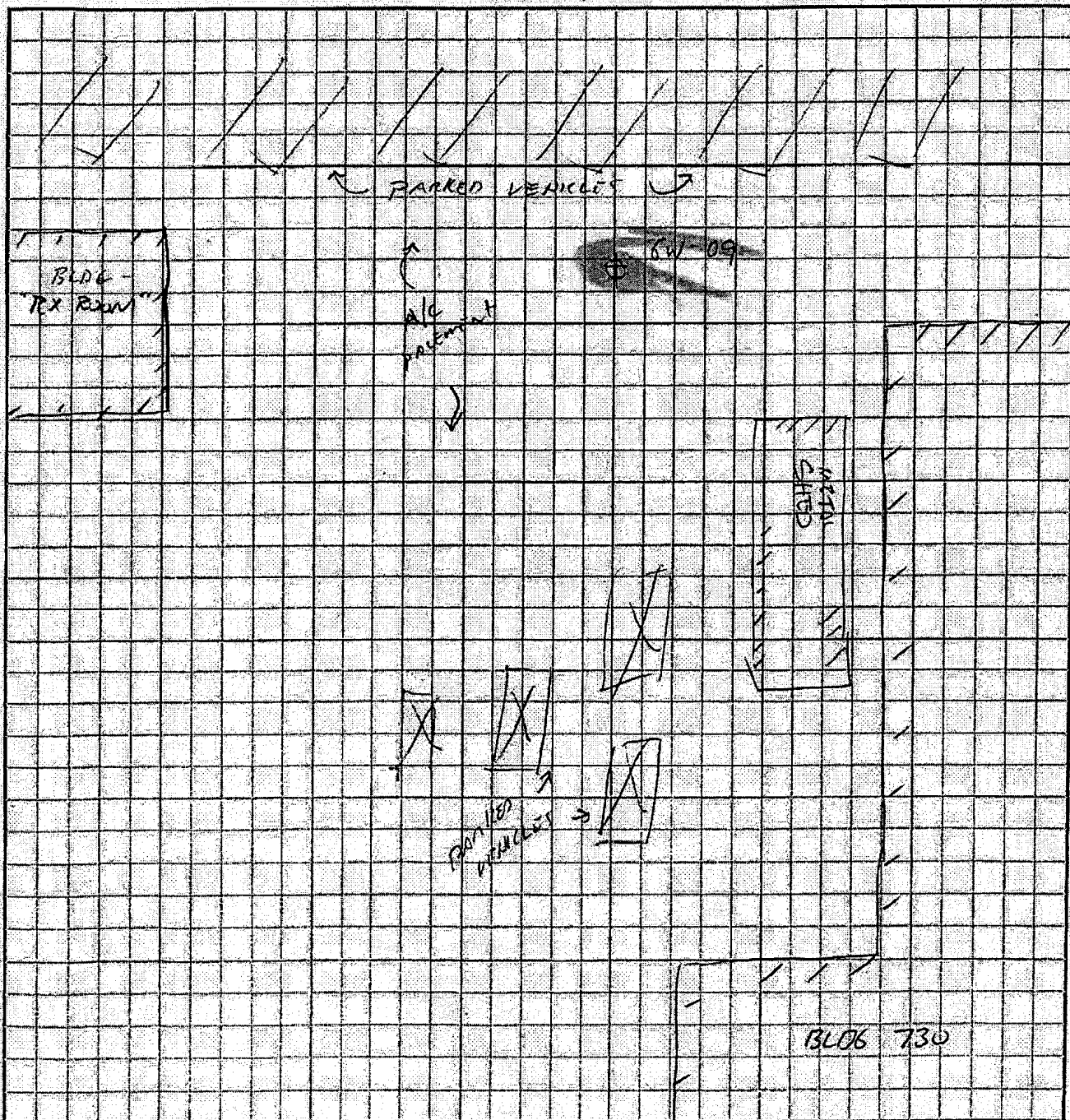
Location CAMP PARIS, Dublin CA

Date 5/19/05 Time 0745

Borehole/Well I.D. GW 09

Operator RWS

Sketch Map



0 20
Feet

N →



RESULTS AND INSTRUMENTATION

GROUND PENETRATING RADAR (GPR)

SIR-3 ☒SIR-7 ☐SIR-8 ☐SIR-10 ☐

Antenna 500 MHz
Range 60 m
Sensitivity M
Filter L

Antenna
Range
Sensitivity
Filter

Taped? Y ☐ N ☒Graphical Record? Y ☒ N ☐Taped? Y ☐ N ☐Graphical Record? Y ☐ N ☐Results Buried objects imaged? Y (N) Other anomalous reflections? Y (N)

possible ss alignment, inferred from
location of physical features, not EMAC; probably
b.c. the dip (~10 ft bss)

ELECTROMAGNETICS (EM)

Mode:

In-Phase ☐Conductivity ☐Background Conductivity ☐ mS/m (mmhos/m)Results Buried metal detected? Y N Other anomalous readings? Y N

PIPE & CABLE LOCATOR RD-400 ☒ RD-600 ☐ Other ☐

Mode: P ☒ R ☒ Applied Signal, Direct Connect ☒ Applied Signal, Induced ☐Results Underground utilities detected near boring/trench location? Y (N)

PIPE & CABLE LOCATOR (M-Scope)

Results Buried metal detected? Y NUnderground utilities detected near boring/trench location? Y N

MAGNETOMETER Schonstedt ☐ Other ☐

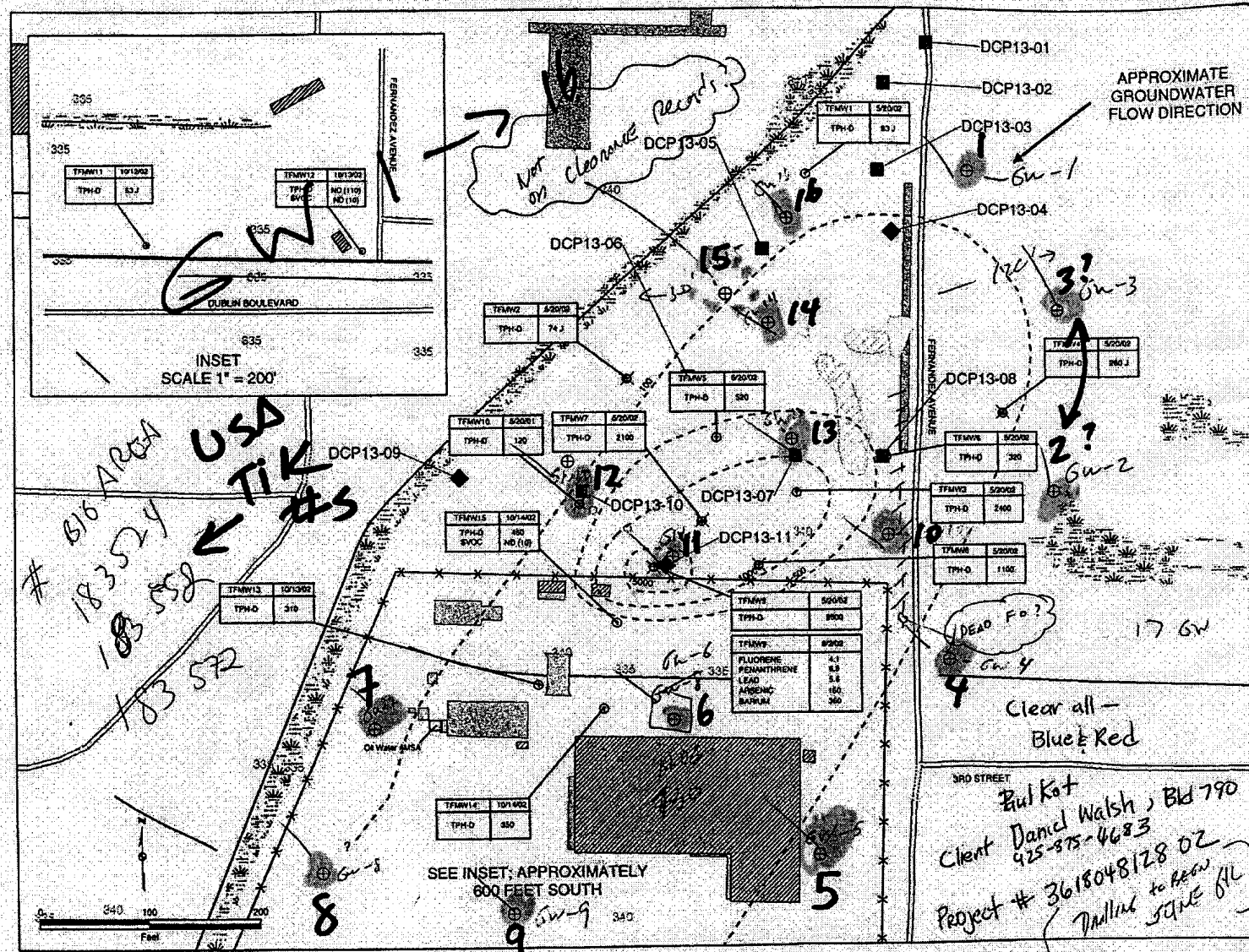
Results Buried metal detected? Y N



50517 P60 4846
525 525

Operator pus





EXPLANATION

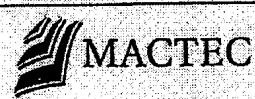
- Existing Well
- Manhole
- Proposed Well Destruction
- Proposed Hydropunch Sample
- Concentration contour
- Drainage Ditch
- Contour
- Road
- Wetland
- Building
- Concrete pad/ structure
- Fence
- Shallow Soil Contamination Area
- Deep Soil Contamination Area
- Identified Magnetic Anomaly
- Unidentified Magnetic Anomaly

Well ID: TFW15, TPH-D, SVOC
 Sample Date: 10/14/04
 Analyte: TPH-D SVOC
 Concentration (ppb): 480 ND(10)

J-qualified results are estimated.

Overview Map

PROJECT NO:	3618048128 01
SCALE:	1" = 100'
CHECKER:	WLF
DATE:	12/2004



Camp Parks
Dublin, California

Groundwater Sampling Locations,
Proposed Hydropunch and
Well Destruction Locations

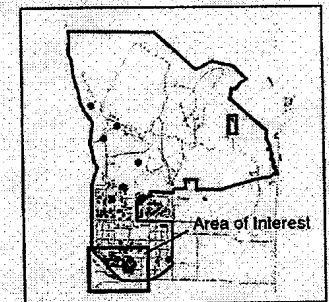
SB 1 → 13

EXPLANATION

- Well
- Manhole
- ✕ Proposed Well Destruction
- ⊙ Proposed Soil Boring
- - - Relative Groundwater Elevation
- ▨ Building
- ▨ Concrete pad/structure
- Elevation Contour Interval = 1ft
- Identified Magnetic Anomaly
- ◆ Unidentified Magnetic Anomaly
- Former Above Ground Storage Tank Features
- Trail
- Pad A
- Pad B
- Piping
- ▼ 2002 Soil Sample
- ▼ 2003 Soil Sample
- == Road
- Wetland
- Fence
- Shallow Soil Contamination Area
- Deep Soil Contamination Area
- Stockpiled Soil
- Drainage Ditch
- Tank A
- Tank B
- Tank C
- Cement Pad

Note: Elevation Contour data based on relative elevations listed in USACH PPM, 2002

Overview Map



Clear All Blue & Red



DRAWN: JCF	PROJECT NO: 3618048128 01
ENGINEER: LDF	SCALE: 1" = 100'
CHECKED: LDF	APPROVED: 12/2004 BPF
DATE:	DATE:



Camp Parks
Dublin, California

Historical Features and
Relative Groundwater Elevations

PLATE

3

APPENDIX B

SOIL BORING LOGS

BORING WELL MACTEC 3618048128_CAMP PARKS.GPJ GEOL.GDT 1/6/06

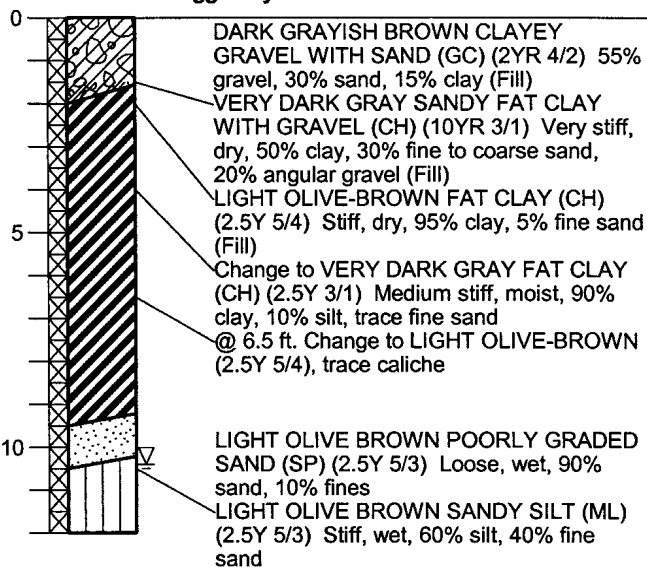
GROUND SURFACE

Sample
Number

Depth (ft.)
Sample

Equipment Geoprobe
Sample Method Continuous Core
Hole Diameter 2 inch
Surface Elevation 342 ft. Date 6/6/05
Reference Datum See Contour Map
Logged By D. Browne

P13SCGW01F



Hydropunch Sample: Screen Interval 12 to 16 Feet. Groundwater sample number P13SCGW01F



Log of Boring P13SCGW01

PRFTA 13 Site Investigation
Parks Reserve Forces Training Area
Dublin, California

PLATE

1

DRAWN
CN

JOB NUMBER
3618048128 02

CHECKED
1/06

CHK'D DATE

APPROVED

APPR'D DATE

BORING WELL MACTEC 3618048128_CAMP PARKS.GPJ GEOL.GDT 1/6/06

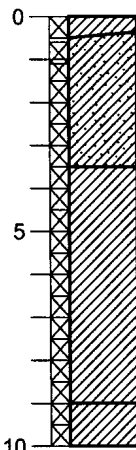
GROUND SURFACE

Sample
Number

Depth (ft.)
Sample

Equipment Geoprobe
Sample Method Continuous Core
Hole Diameter 2 inch
Surface Elevation 342 ft. Date 6/6/05
Reference Datum See Contour map
Logged By D. Browne

P13SCGW02F



VERY DARK GRAY GRAVELLY LEAN CLAY WITH SAND (CL) (10YR 3/1) Loose, dry, 50% clay, 30% gravel, 20% fine to coarse sand (Fill)
VERY DARK GRAY SANDY LEAN CLAY (CL) (10YR 3/1) Stiff, dry, 65% clay, 30% fine to coarse sand, 5% gravel
VERY DARK GRAY LEAN CLAY (CL) (10YR 3/1) Stiff, dry, 90% clay, 10% fine to medium sand

@ 9 feet Change to DARK GRAYISH BROWN LEAN CLAY (CL) (5Y 4/2) Soft, moist, 90% clay, 10% silt

Hydropunch Sample: Screen Interval 12 to 16 Feet. groundwater sample number P13SCGW02F



DRAWN
CN

JOB NUMBER
3618048128 02

Log of Boring P13SCGW02
PRFTA 13 Site Investigation
Parks Reserve Forces Training Area
Dublin, California
CHECKED
1/06

APPROVED

APPR'D DATE

PLATE

2

BORING WELL MACTEC 3618048128 CAMPPARKS.GPJ GEOL.GDT 1/8/06

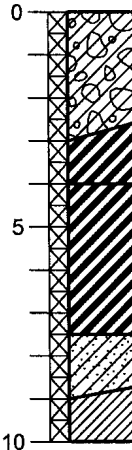
GROUND SURFACE

Sample
Number

Depth (ft.)
Sample

Equipment Geoprobe
Sample Method Continuous Core
Hole Diameter 2 inch
Surface Elevation 341 ft. Date 6/6/05
Reference Datum See Contour Map
Logged By D. Browne

P13SCGW03F



BROWN SILTY GRAVEL WITH SAND
(GM) (10YR 5/3) Loose, dry, 50% gravel,
30% fine to coarse sand, 20% silt (Fill)

DARK GRAY SANDY FAT CLAY WITH
GRAVEL (CH) (10YR 4/1) Stiff, dry, 50%
clay, 30% fine to coarse sand, 20% gravel
DARK BROWN FAT CLAY (CH) (10YR
4/1) Stiff, dry, 85% clay, 10% fine sand, 5%
silt

DARK GRAYISH BROWN CLAYEY SAND
(SC) (5Y 4/2) Loose, moist, 80% fine to
medium sand, 20% lean clay
DARK GRAYISH BROWN LEAN CLAY
WITH SAND (CL) (5Y 4/2) Soft, moist, 75%
clay, 25% fine to medium sand

Hydropunch Sample: Hydropunch Screen
Interval 12 to 16 Feet. Groundwater sample
number P13SCGW03F



DRAWN
CN

JOB NUMBER
3618048128 02

Log of Boring P13SCGW03

PRFTA 13 Site Investigation
Parks Reserve Forces Training Area
Dublin, California

CHECKED
1/06

APPROVED

APPR'D DATE

PLATE

3

BORING WELL MACTEC 3618048128 CAMPPARKS GPJ GEOL.GDT 1/6/06

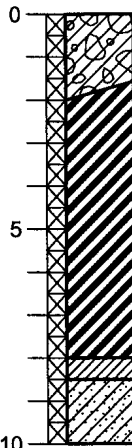
GROUND SURFACE

Sample
Number

Depth (ft.)
Sample

Equipment Geoprobe
 Sample Method Continuous Core
 Hole Diameter 2 inch
 Surface Elevation 340 ft. Date 6/6/05
 Reference Datum See Contour Map
 Logged By D. Browne

P13SCGW04F



BROWN CLAYEY GRAVEL WITH SAND
(GC) (10YR 5/3) Loose, dry, 50% gravel,
30% sand, 20% lean clay. (Fill)

VERY DARK GRAYISH BROWN FAT
CLAY (CH) (10YR 3/2) Firm, moist, 80%
clay, 20% silt

OLIVE BROWN LEAN CLAY (CL) (2.5Y
5/2) Soft, moist, 85% clay, 15% silt
LIGHT OLIVE BROWN CLAYEY SAND
(SC) (2.5Y 5/3) Loose, moist, 60% fine
sand, 40% clay

Sampled through a 2 inch P.V.C. screen:
P.V.C. screen interval from 8 to 13 feet.
Ground water sample number
P13SCGW04F

PLATE



Log of Boring P13SCGW04

PRFTA 13 Site Investigation
Parks Reserve Forces Training Area
Dublin, California

4

DRAWN
CN

JOB NUMBER
3618048128 02

CHECKED
1/06

APPROVED

APPRV'D DATE

BORING WELL MACTEC 3618048128 CAMPPARKS.GPJ GEOL.GDT 1/6/06

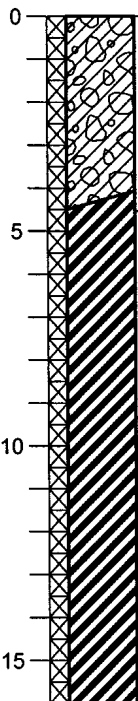
GROUND SURFACE

Sample
Number

Depth (ft.)
Sample

Equipment Geoprobe
Sample Method Continuous Core
Hole Diameter 2 inch
Surface Elevation 340 ft. Date 6/6/05
Reference Datum See Contour Map
Logged By D. Browne

P13SCGW05F



DARK GRAYISH BROWN CLAYEY
GRAVEL WITH SAND (GC) (2.5Y 4/1)
Loose, dry, 60% gravel, 20% fine to coarse
sand, 20% lean clay (Fill)

@ 3 feet DARK GRAY CLAYEY GRAVEL
WITH SAND (GC) (5Y 3/1) Medium dense,
moist, 50% gravels, 30% fine to coarse
sand, 20% lean clay.
VERY DARK GRAY FAT CLAY (CH) (5Y
3/1) Moist, stiff, 80% clay, 20% silt, trace
fine sand

@ 8 ft.: Color change to GRAY (5Y 5/1)

@ 10 ft.: Color change to OLIVE GRAY
(5Y4/2)

@ 15.5 ft. Change to DARK GREENISH
GRAY (5GY 4/1), soft, wet

Sampled through a 2 inch P.V.C. screen.
Screen interval from 11 to 16 feet. Ground
water sample number P13SCGW05F

PLATE



Log of Boring P13SCGW05

PRFTA 13 Site Investigation
Parks Reserve Forces Training Area
Dublin, California

5

DRAWN
CN

JOB NUMBER
3618048128 02

CHECKED

CHK'D DATE

1/06

APPROVED

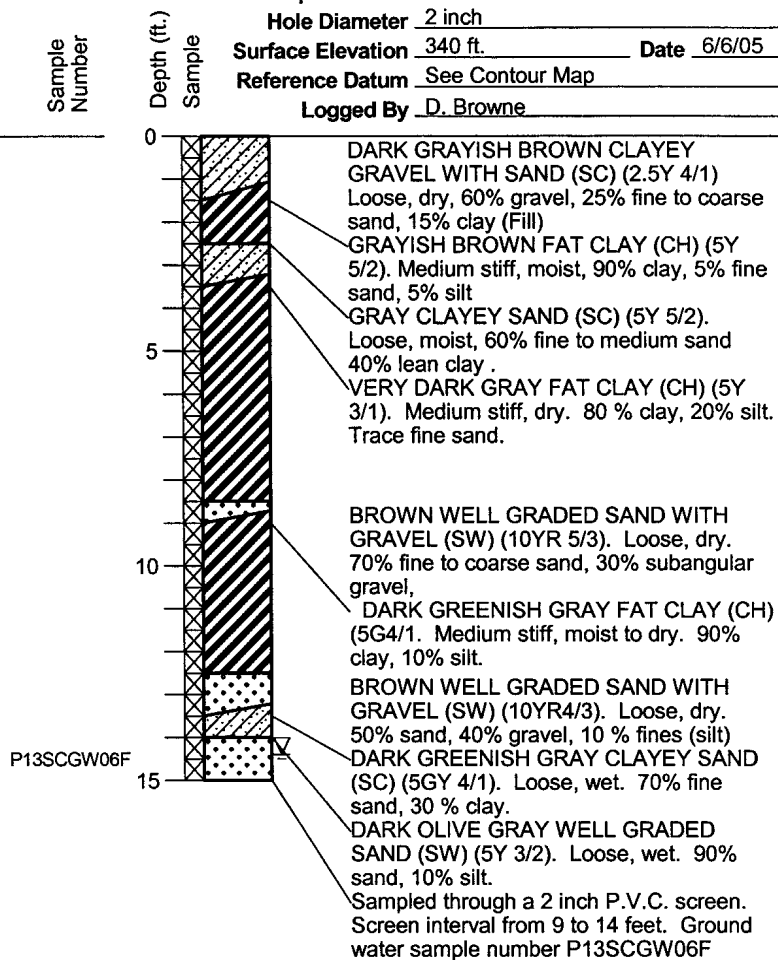
APPR'D DATE

BORING_WELL_MACTEC_3618048128_CAMP PARKS.GPJ GEOL.GDT 1/6/06

GROUND SURFACE

Sample
Number

Equipment	Geoprobe		
Sample Method	Continuous Core		
Hole Diameter	2 inch		
Surface Elevation	340 ft.	Date	6/6/05
Reference Datum	See Contour Map		
Logged By	D. Browne		



PLATE



MACTEC

DRAWN
CN

JOB NUMBER
3618048128 02

Log of Boring P13SCGW06

PRFTA 13 Site Investigation
Parks Reserve Forces Training Area
Dublin, California

CHECKED
1/06

APPROVED

APPR'D DATE

6

BORING WELL MACTEC 3618048128 CAMPPARKS GPJ GEOL.GDT 1/6/06

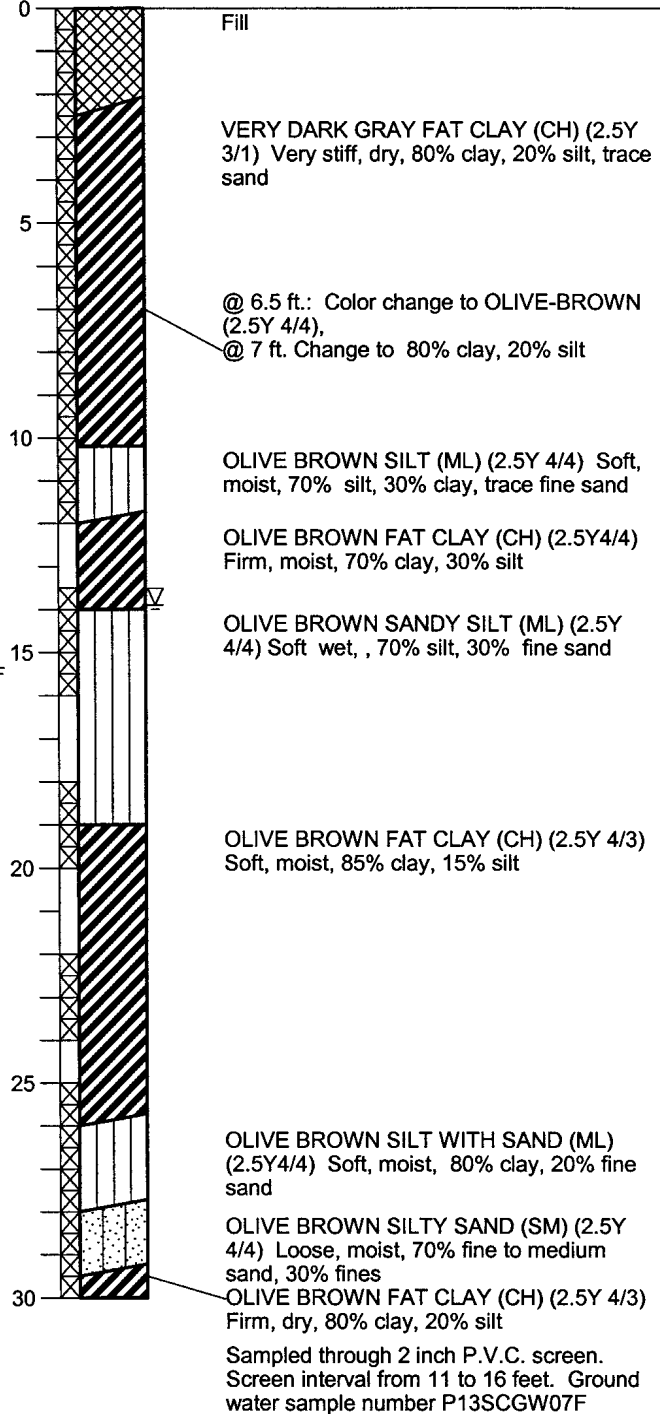
GROUND SURFACE

Sample
Number

Equipment Geoprobe
Sample Method Continuous Core
Hole Diameter 2 inch
Surface Elevation 338 ft. Date 6/7/05
Reference Datum See Contour Map
Logged By D. Browne

Depth (ft.)
Sample

P13SCGW07F



PLATE



Log of Boring P13SCGW07

PRFTA 13 Site Investigation
Parks Reserve Forces Training Area
Dublin, California

7

DRAWN
CN

JOB NUMBER
3618048128 02

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CHK'D DATE
1/06

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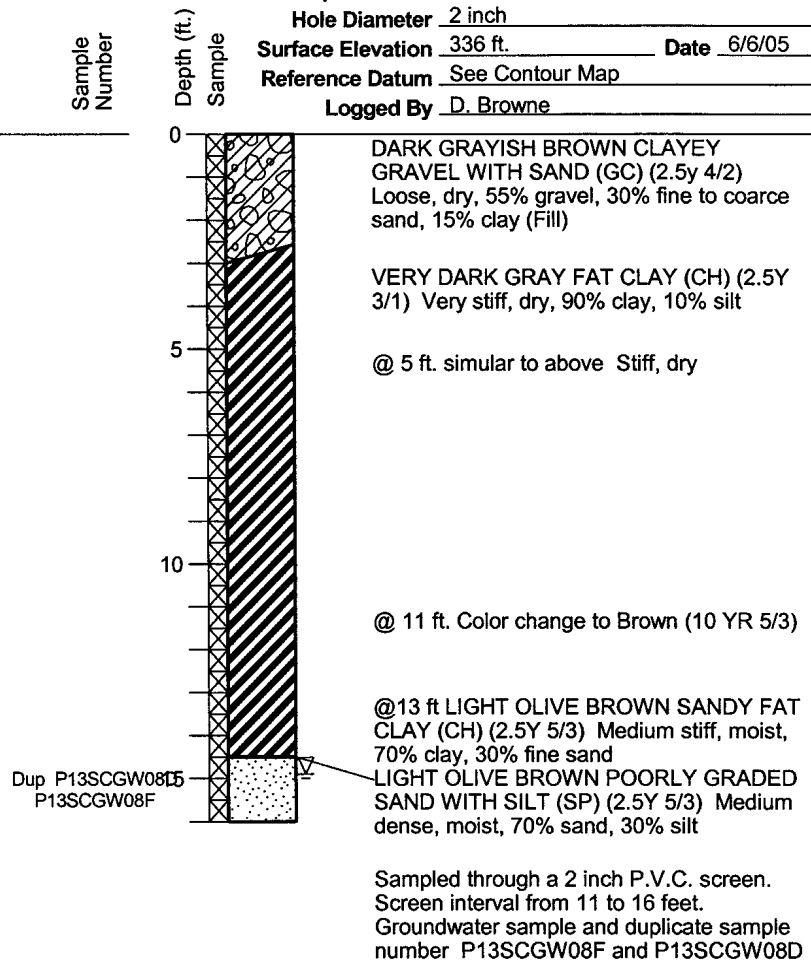
APPR'D DATE

BORING WELL MACTEC 3618048128 CAMPPARKS.GPJ GEOL.GDT 1/6/06

GROUND SURFACE

Sample
Number

Equipment	Geoprobe		
Sample Method	Continuous Core		
Hole Diameter	2 inch		
Surface Elevation	336 ft.	Date	6/6/05
Reference Datum	See Contour Map		
Logged By	D. Browne		



DRAWN
CN

JOB NUMBER
3618048128 02

Log of Boring P13SCGW08

PRFTA 13 Site Investigation
Parks Reserve Forces Training Area
Dublin, California

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1/06

APPROVED

APPR'D DATE

PLATE

8

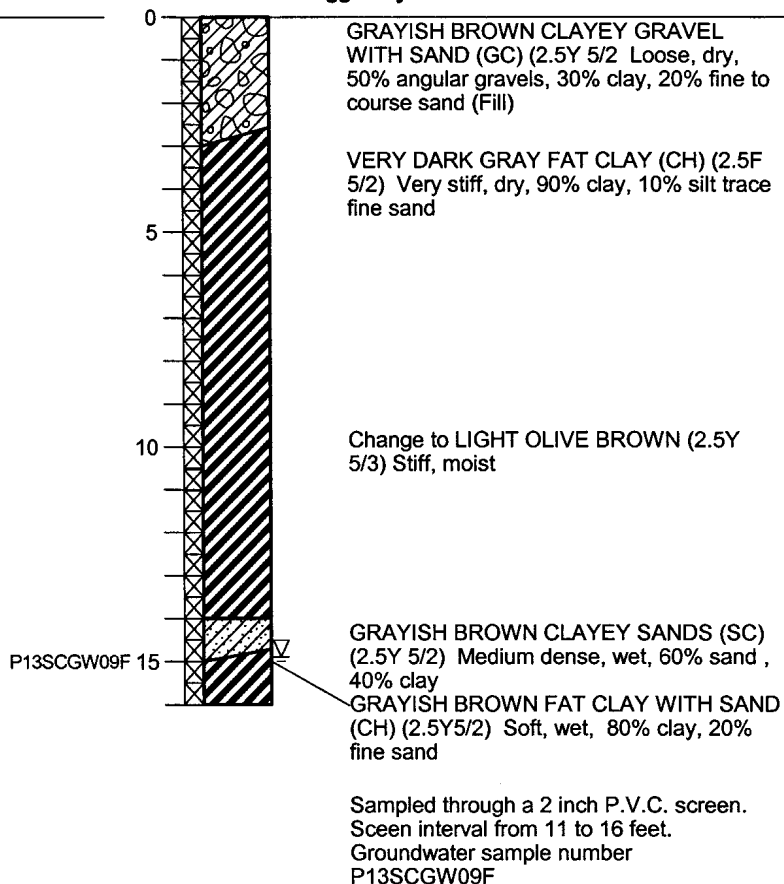
BORING WELL MACTEC 3618048128_CAMP PARKS GPJ GEOL.GDT 1/6/06

GROUND SURFACE

Sample
Number

Depth (ft.)
Sample

Equipment Geoprobe
Sample Method Continuous Core
Hole Diameter 2 inch
Surface Elevation 340 ft. Date 6/7/05
Reference Datum See Contour Map
Logged By D. Browne



PLATE



Log of Boring P13SCGW09

PRFTA 13 Site Investigation
Parks Reserve Forces Training Area
Dublin, California

9

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CN

JOB NUMBER
3618048128 02

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1/06

CHK'D DATE

APPROVED

APPR'D DATE

BORING WELL MACTEC 3618048128_CAMP PARKS.GPJ GEOL.GDT 1/6/06

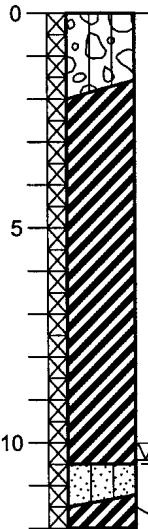
GROUND SURFACE

Sample
Number

Depth (ft.)
Sample

Equipment Geoprobe
 Sample Method Continuous Core
 Hole Diameter 2 inch
 Surface Elevation 340 ft. Date 6/7/05
 Reference Datum See Contour Map
 Logged By D. Browne

P13SCGW10F



GRAYISH BROWN SILTY GRAVEL WITH SAND (GM) (10YR 5/2) Loose, dry, 50% angular gravels, 30% sand, 20% silt (Fill)

DARK OLIVE GRAY FAT CLAY (CH) (5Y3/2) hard, dry, 80% clay 20% silt, trace fine sand

@ 4 ft. color change to VERY DARK GRAY (2.5Y 3/2) trace gravel

@ 10.5 Color change to OLIVE GRAY (2.5Y4/2)

OLIVE GRAY SILTY SAND (SM) (5Y4/2) Loose, moist to wet, 85% fine sand, 15% silt Slight hydrocarbon odor.

DARK GREENISH GRAY FAT CLAY (CH) (5GY4/1) soft, moist, 71% clay, 30% silt, slight hydrocarbon odor, visible sheen.

Hydropunch Sample: Screen Interval from 12 to 16 feet. Ground water sample number P13SCGW10F

PLATE

MACTEC

DRAWN CN

JOB NUMBER 3618048128 02

Log of Boring P13SCGW10

PRFTA 13 Site Investigation
 Parks Reserve Forces Training Area
 Dublin, California

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	1/06		

BORING WELL MACTEC 3618048128_CAMP PARKS.GPJ GEOL.GDT 1/6/06

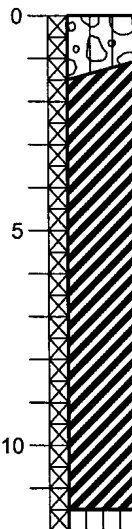
GROUND SURFACE

Sample
Number

Equipment Geoprobe
Sample Method Continuous Core
Hole Diameter 2 inch
Surface Elevation 340 ft. Date 6/7/05
Reference Datum See Contour Map
Logged By D. Browne

Depth (ft.)
Sample

P13SCGW11F



GRAYISH BROWN SILTY GRAVEL WITH
SAND (GM) (2.5Y 5/1) Loose, dry 50%
angular gravel, 30% fine to coarse sand,
20% silt (Fill)
GRAYISH BROWN FAT CLAY (CH) (10YR
5/2) Very stiff, dry, 80% clay, 15% fine sand,
5% silt Mottled with dark gray (10YR3/1)
trace roots

@ 5 ft. Color change to VERY DARK GRAY
(2.5Y3/1)

@ 9 ft. Trace roots

@ 9 ft. Increase in silt to 25%

DARK GREENISH GRAY SILT WITH
SAND (ML) (5G 4/1) Soft, moist, 70% silt,
30% sand. Slight hydrocarbon odor.
Hydropunch Sample: Screen Interval from
12 to 16 feet. Groundwater sample number
P13SCGW11F

PLATE



DRAWN
CN

JOB NUMBER
3618048128 02

Log of Boring P13SCGW11

PRFTA 13 Site Investigation
Parks Reserve Forces Training Area
Dublin, California

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1/06

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APPR'D DATE

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BORING WELL MACTEC 3618048128 CAMPPARKS.GPJ GEOL.GDT 1/6/06

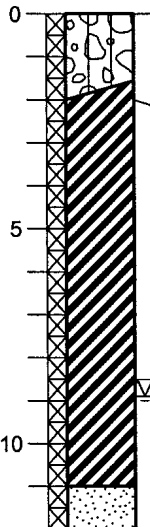
GROUND SURFACE

Sample
Number

Depth (ft.)
Sample

Equipment Geoprobe
Sample Method Continuous Core
Hole Diameter 2 inch
Surface Elevation 338 ft. Date 6/7/05
Reference Datum See Contour Map
Logged By D. Browne

P13SCGW12F



GRAYISH BROWN SILTY GRAVEL WITH SAND (GM) (2.5Y5/1) Loose, dry, 50% angular gravel, 30% fine to coarse sand, 20% silt (Fill)
GRAYISH BROWN FAT CLAY (CH) (10YR 5/2) Very stiff, dry, 80% clay, 20% silt Mottled with very dark gray (10YR 3/1) Trace fine sand, Trace gravel

@ 5 ft. Change to BROWN FAT CLAY (CH) (10YR 4/3) Stiff, dry, increase in silt to 35%, trace fine sand

@ 9 ft. Change to BROWN SANDY FAT CLAY (CH) (10YR 4/3) Soft, wet, 60% clay, 40% fine to medium sand

VERY DARK GRAYISH BROWN POORLY GRADED SAND (SP) (10YR 3/2) Loose, wet, 90% fine to medium sand, 10% fines

Hydropunch Sample: Screen interval from 12 to 16 feet. Ground water sample number P13SCGW12F



DRAWN
CN

JOB NUMBER
3618048128 02

Log of Boring P13SCGW12
PRFTA 13 Site Investigation
Parks Reserve Forces Training Area
Dublin, California

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1/06

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APPR'D DATE

12

PLATE

BORING WELL MACTEC 3618048128 CAMPPARKS.GPJ GEOL.GDT 1/6/06

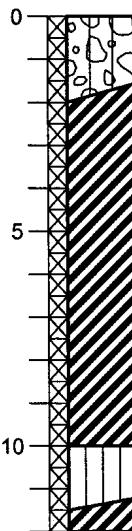
GROUND SURFACE

Sample
Number

Equipment	Geoprobe		
Sample Method	Continuous Core		
Hole Diameter	2 inch		
Surface Elevation	340 ft.	Date	6/7/05
Reference Datum	See Contour Map		
Logged By	D. Browne		

P13SCGW13F

Depth (ft.)
Sample



LIGHT GRAYISH BROWN SILTY GRAVEL WITH SAND (GM) (2.5Y 6/2) Loose, dry, 50% gravel, 30% fine to coarse sand, 20% silt

DARK GRAY FAT CLAY (CH) (2.5Y 4/1) Very stiff, dry, 90% clay, 10% silt

@ 4 ft. Color change to DARK GRAYISH BROWN (10YR 4/2)

@ 6 ft. increase in silt to 30%

OLIVE GRAY SANDY SILT (ML) (5Y 5/2) Stiff, moist, 60% silt, 40% fine sand

DARK GREENISH GRAY FAT CLAY (CH) (5G 4/1) Soft, moist, 80% clay, 20% silt, slight hydrocarbon odor, @ 12 ft. increase in sand

Hydropunch Sample: Screen interval from 13 to 16 feet. Ground water sample number 13SCGW13F

PLATE



Log of Boring P13SCGW13
PRFTA 13 Site Investigation
Parks Reserve Forces Training Area
Dublin, California

13

DRAWN
CN

JOB NUMBER
3618048128 02

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1/06

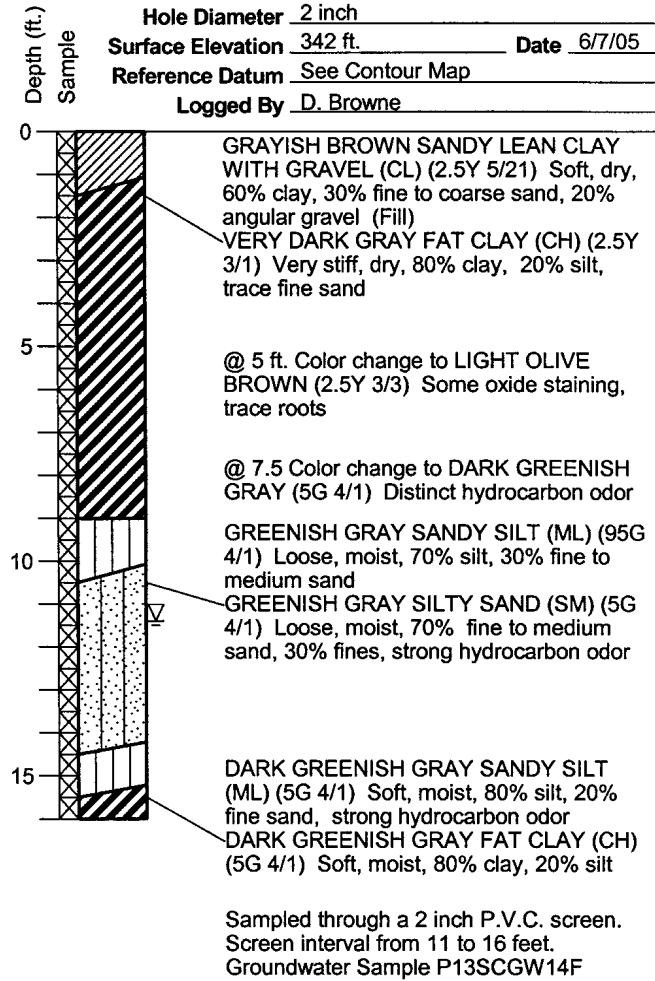
CHK'D DATE

APPROVED

APPRV'D DATE

GROUND SURFACE

Equipment Geoprobe
 Sample Method Continuous Core
 Hole Diameter 2 inch
 Surface Elevation 342 ft. Date 6/7/05
 Reference Datum See Contour Map
 Logged By D. Browne



BORING WELL_MACTEC 3618048128_CAMP/PARKS.GPJ GEOL.GDT 1/6/06



Log of Boring P13SCGW14

PRFTA 13 Site Investigation
 Parks Reserve Forces Training Area
 Dublin, California

PLATE

14

DRAWN
CN

JOB NUMBER
3618048128 02

CHECKED
1/06

CHK'D DATE

APPROVED

APPR'D DATE

BORING WELL MACTEC 3618048128 CAMPPARKS.GPJ GEOL GDT 1/6/06

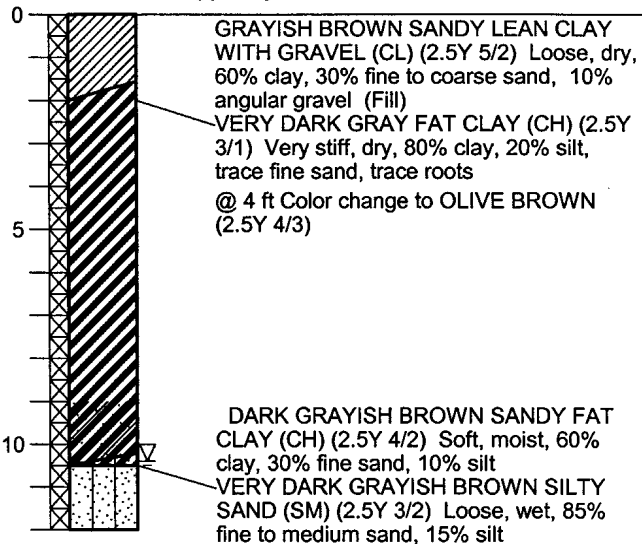
GROUND SURFACE

Sample
Number

Equipment Geoprobe
 Sample Method Continuous Core
 Hole Diameter 2 inch
 Surface Elevation 340 ft. Date 6/7/05
 Reference Datum See Contour Map
 Logged By D. Browne

Depth (ft.)
Sample

P13SCGW15F



Hydropunch Sample: Screen interval from 12 to 16 feet. Ground water sample number P13SCGW15F.

PLATE



Log of Boring P13SCGW15A

PRFTA 13 Site Investigation
 Parks Reserve Forces Training Area
 Dublin, California

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DRAWN

JOB NUMBER

CHECKED

CHK'D DATE

APPROVED

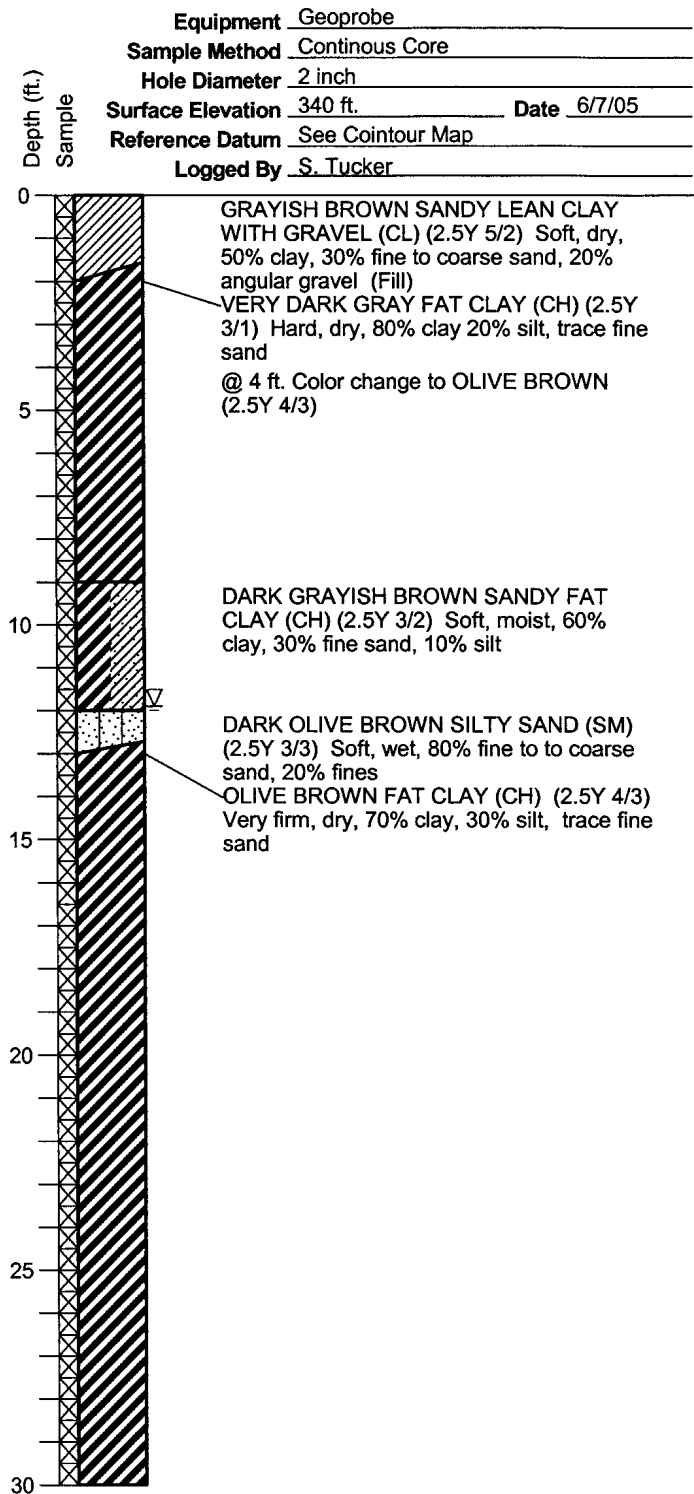
APPRV'D DATE

CN

3618048128 02

1/06

GROUND SURFACE



BORING WELL MACTEC 3618048128 CAMPPARKS.GPJ GEOL.GDT 1/6/06



Log of Boring P13SCGW15B
 PRFTA 13 Site Investigation
 Parks Reserve Forces Training Area
 Dublin, California

PLATE

16

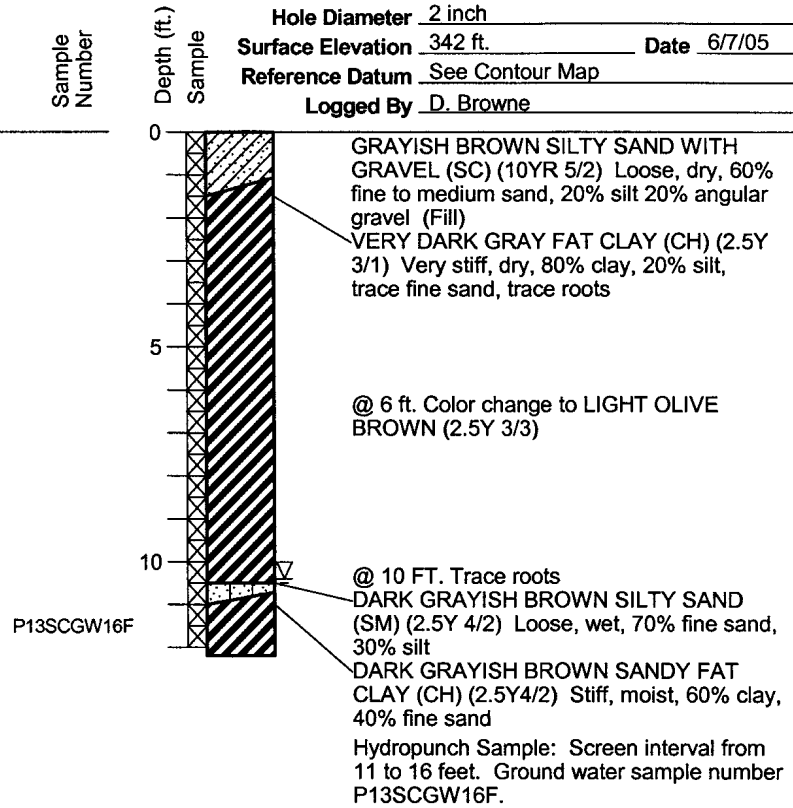
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CN	3618048128 02		1/06		

BORING WELL MACTEC 3618048128 CAMPPARKS.GPJ GEOL.GDT 1/6/06

GROUND SURFACE

Sample
Number

Equipment Geoprobe
Sample Method Continuous Core
Hole Diameter 2 inch
Surface Elevation 342 ft. Date 6/7/05
Reference Datum See Contour Map
Logged By D. Browne



Log of Boring P13SCGW16

PRFTA 13 Site Investigation Reserve Forces
Parks Reserve Forces Training Area
Dublin, California

PLATE

17

DRAWN
CN

JOB NUMBER
3618048128 02

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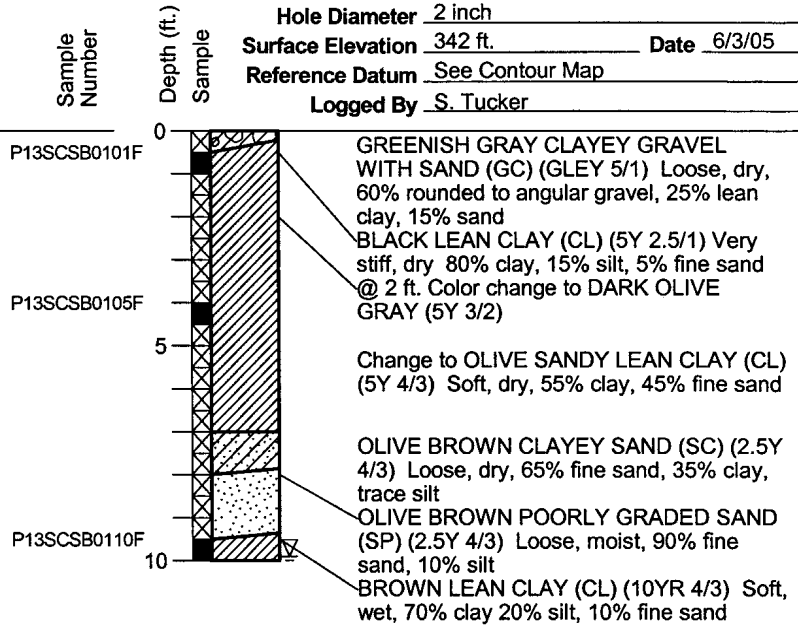
CHK'D DATE
1/06

APPROVED

APPR'D DATE

Equipment Geoprobe
 Sample Method Continuous Core
 Hole Diameter 2 inch
 Surface Elevation 342 ft. Date 6/3/05
 Reference Datum See Contour Map
 Logged By S. Tucker

GROUND SURFACE



BORING WELL MACTEC 3618048128 CAMPPARKS.GPJ GEOL.GDT 1/6/06



Log of Boring P13SCSB01

PRFTA 13 Site Investigation
 Parks Reserve Forces Training Area
 Dublin, California

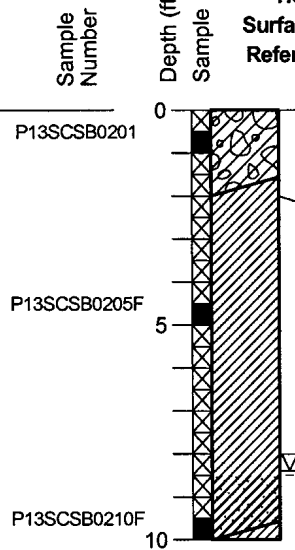
PLATE

18

DRAWN	JOB NUMBER	CHECKED	CHK'D DATE	APPROVED	APPRV'D DATE
CN	3618048128 02		1/06		

Equipment Geoprobe
 Sample Method Continuous Core
 Hole Diameter 2 inch
 Surface Elevation 342 ft. Date 6/3/05
 Reference Datum See Contour Map
 Logged By S. Tucker

GROUND SURFACE



DARK GRAYISH BROWN CLAYEY GRAVEL (GC) Loose, dry, 60% rounded to angular gravel, 30% clay, 10% fine grain sand (Fill)

BLACK LEAN CLAY (CL) (5Y 2.5/1) Firm, dry, 80% clay, 15% silt, 5% fine sand @ 3.5 ft Color change to DARK OLIVE GRAY (5Y 3/2)

DARK OLIVE BROWN SANDY LEAN CLAY (CL) (2.5Y 3/3) Soft, wet, 55% clay, 45% fine sand

BORING WELL MACTEC 3618048128 CAMPPARKS.GPJ GEOL.GDT 1/6/06

PLATE



Log of Boring P13SCSB02

PRFTA 13 Site Investigation
 Parks Reserve Forces Training Area
 Dublin, California

CHECKED CN

CHK'D DATE 1/06

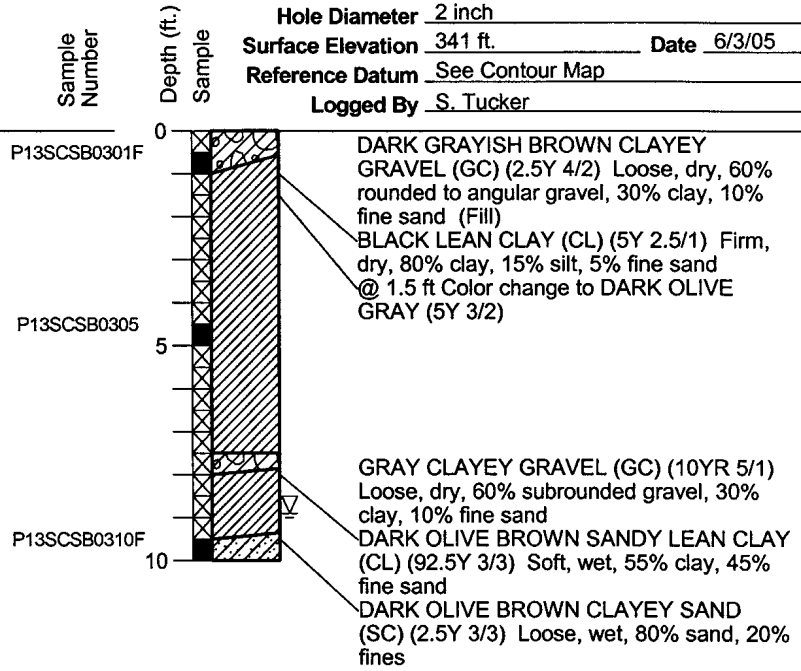
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APPR'D DATE

19

Equipment Geoprobe
 Sample Method Continuous Core
 Hole Diameter 2 inch
 Surface Elevation 341 ft. Date 6/3/05
 Reference Datum See Contour Map
 Logged By S. Tucker

GROUND SURFACE



BORING WELL MACTEC 3618048128 CAMPPARKS.GPJ GEOL.GDT 16/06



Log of Boring P13SCSB03
 PRFTA 13 Site Investigation
 Parks Reserve Forces Training Area
 Dublin, California

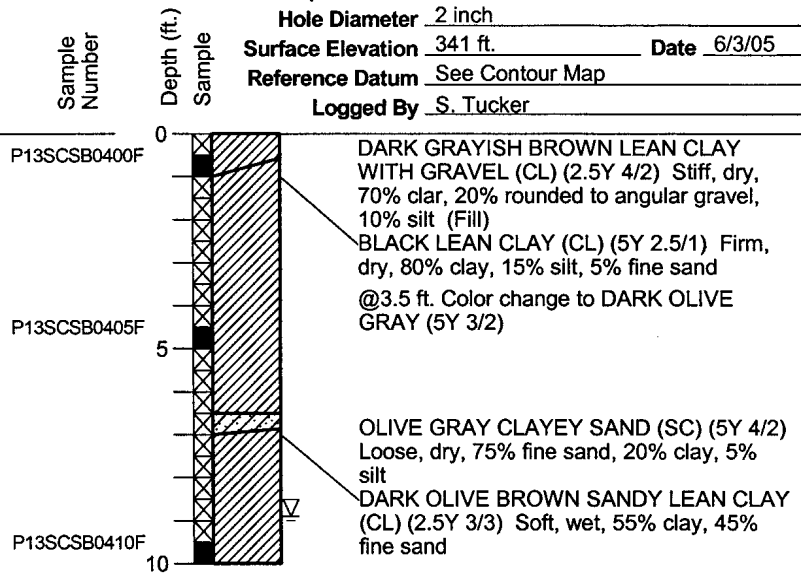
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20

DRAWN	JOB NUMBER	CHECKED	CHK'D DATE	APPROVED	APPR'D DATE
CN	3618048128 02		1/06		

Equipment	Geoprobe		
Sample Method	Continuous Core		
Hole Diameter	2 inch		
Surface Elevation	341 ft.	Date	6/3/05
Reference Datum	See Contour Map		
Logged By	S. Tucker		

GROUND SURFACE



BORING WELL MACTEC 3618048128 CAMPPARKS.GPJ GEOL.GDT 1/6/06



Log of Boring P13SCSB04
 PRFTA 13 Site Investigation
 Parks Reserve Forces Training Area
 Dublin, California

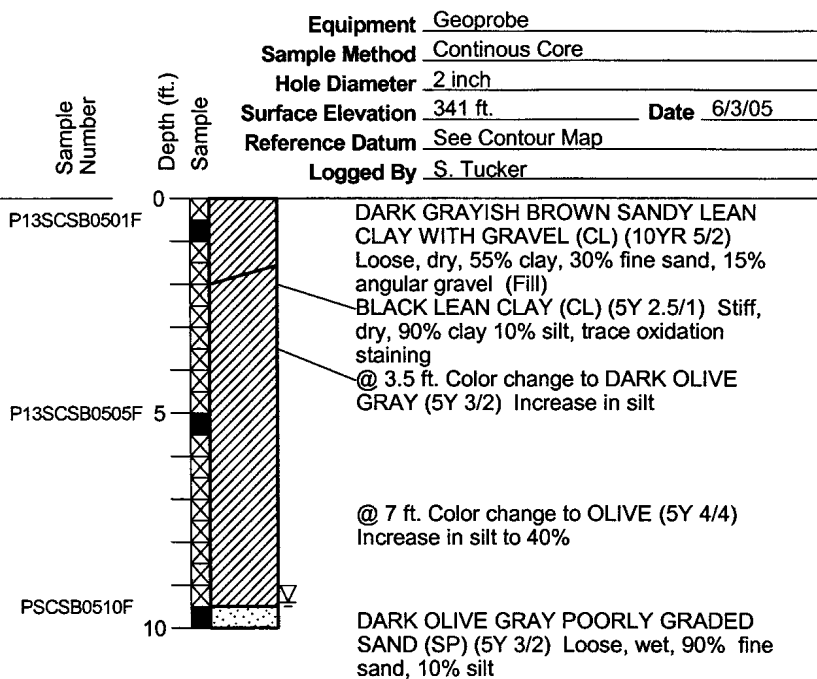
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21

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CN	3618048128 02		1/06		

BORING WELL MACTEC 3618048128_CAMP PARKS.GPJ GEOL.GDT 1/6/06

GROUND SURFACE



PLATE



Log of Boring P13SCSB05

PRFTA 13 Site Investigation
Parks Reserve Forces Training Area
Dublin, California

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3618048128 02

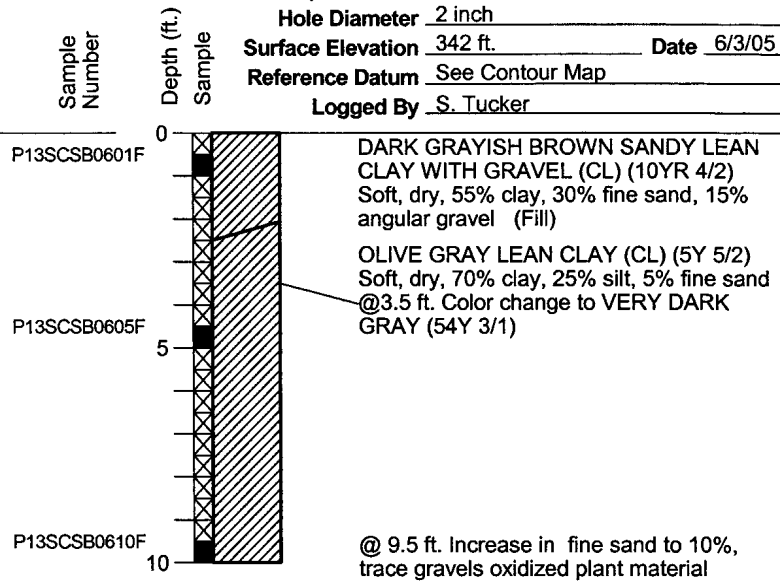
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1/06

APPROVED

APPR'D DATE

Equipment Geoprobe
 Sample Method Continuous Core
 Hole Diameter 2 inch
 Surface Elevation 342 ft. Date 6/3/05
 Reference Datum See Contour Map
 Logged By S. Tucker

GROUND SURFACE



BORING WELL MACTEC 3618048128 CAMPPARKS.GPJ GEOL.GDT 1/6/06



JOB NUMBER
3618048128 02

Log of Boring P13SCSB06

PRFTA 13 Site Investigation
Parks Reserve Forces Training Area
Dublin, California

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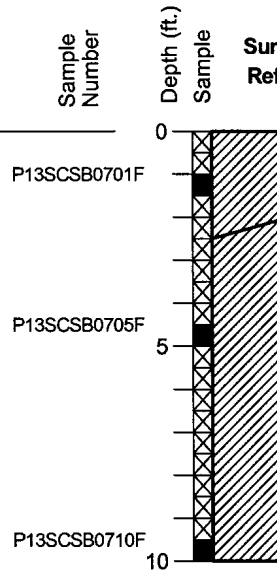
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23

PLATE

Equipment	Geoprobe		
Sample Method	Continuous Core		
Hole Diameter	2 inch		
Surface Elevation	342 ft.	Date	6/3/05
Reference Datum	See Contour Map		
Logged By	S. Tucker		

GROUND SURFACE



DARK GRAYISH BROWN SANDY LEAN CLAY WITH GRAVEL (CL) (2.5Y 4/2) Soft, dry, 55% clay, 30% fine sand 15% angular gravel (Fill)

OLIVE GRAY LEAN CLAY (CL) (5Y M5/2) Soft, dry, 70% clay, 25% silt, 5% fine sand

@ 4.5 ft. Color change to VERY DARK GRAY (5Y 3/1)

@ 7.5 Color change to BROWN (7.5 YR 4/4)

BORING WELL MACTEC 3618048128 CAMPPARKS.GPJ GEOL.GDT 1/6/06



Log of Boring P13SCSB07
 PRFTA 13 Site Investigation
 Parks Reserve Forces Training Area
 Dublin, California

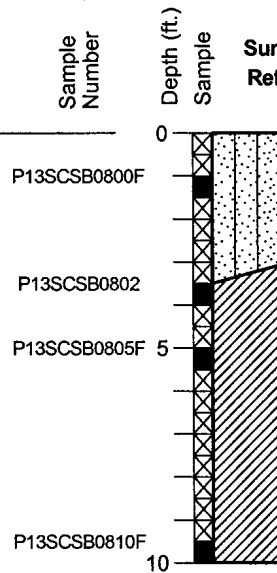
PLATE

24

DRAWN	JOB NUMBER	CHECKED	CHK'D DATE	APPROVED	APPR'D DATE
CN	3618048128 02		1/06		

Equipment Geoprobe
Sample Method Continuous Core
Hole Diameter 2 inch
Surface Elevation 340 ft. **Date** 6/3/05
Reference Datum See Contour Map
Logged By S. Tucker

GROUND SURFACE



GRAYISH BROWN SILTY SAND WITH GRAVEL (SM) (10YR 5/2) Loose, dry, 60% fine to medium sand, 20% silt, 20% fine to medium sand, 20-% angular gravel (Fill)

BLACK LEAN CLAY (CL) (5Y 2.5/1) Soft, dry, 70% clay, 20% silt, 5% fine sand, slight hydrocarbon odor

@ 7.5 ft. Increase in mottling, increase in silt

@ 9.5 ft. Color change to DARK GREENISH GRAY (GLEY 4/1)

BORING WELL MACTEC 3618048128 CAMPPARKS.GPJ GEOL.GDT 1/6/06



JOB NUMBER
3618048128 02

Log of Boring P13SCSB08

PRFTA 13 Site Investigation
Parks Reserve Forces Training Area
Dublin, California

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1/06

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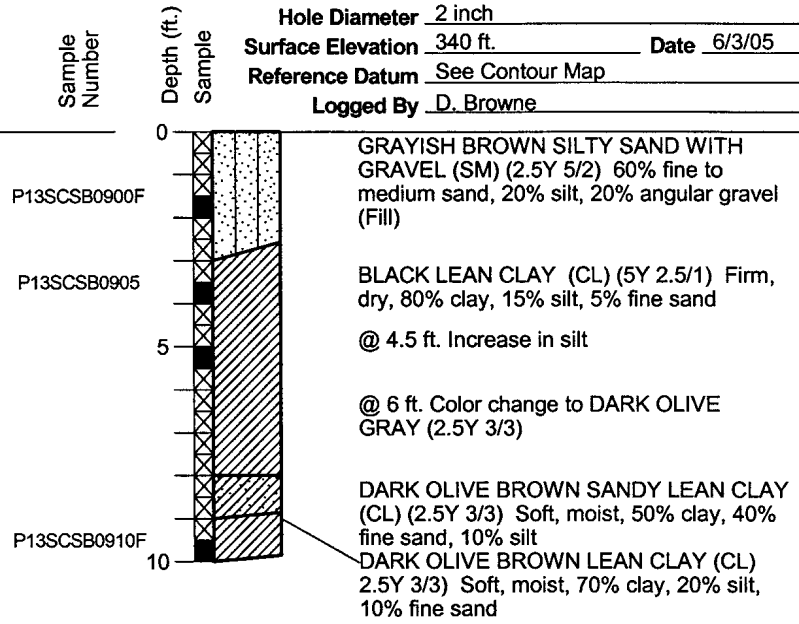
APPR'D DATE

25

PLATE

Equipment	Geoprobe		
Sample Method	Continuous Core		
Hole Diameter	2 inch		
Surface Elevation	340 ft.	Date	6/3/05
Reference Datum	See Contour Map		
Logged By	D. Browne		

GROUND SURFACE



BORING WELL MACTEC 3618048128 CAMPPARKS.GPJ GEOL.GDT 1/6/06

PLATE



Log of Boring P13SCSB09

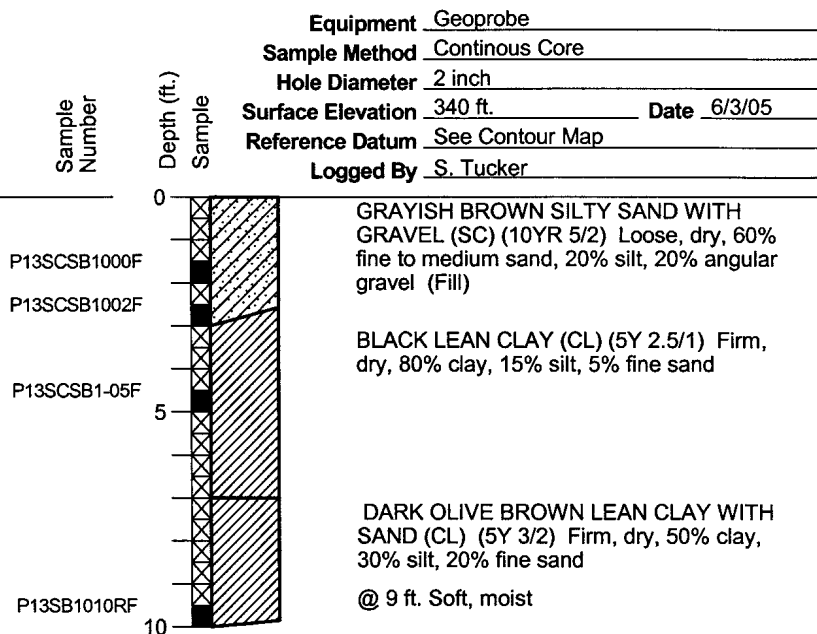
PRFTA 13 Site Investigation
Parks Reserve Forces Training Area
Dublin, California

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DRAWN	JOB NUMBER	CHECKED	CHK'D DATE	APPROVED	APPR'D DATE
CN	3618048128 02		1/06		

BORING WELL MACTEC 3618048128_CAMP PARKS.GPJ GEOL.GDT 1/6/06

GROUND SURFACE



Log of Boring P13SCSB10
PRFTA 13 Site Investigation
Parks Reserve Forces Training Area
Dublin, California

PLATE

27

DRAWN
CN

JOB NUMBER
3618048128 02

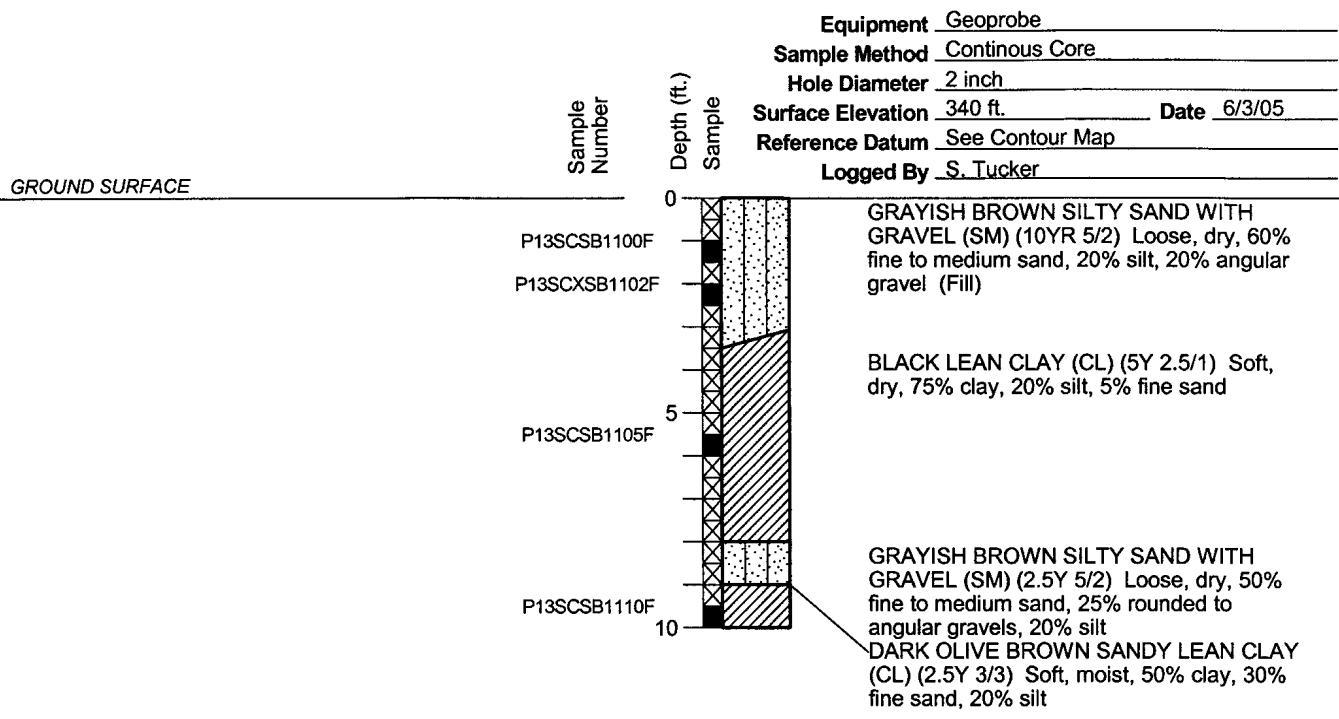
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CHCK'D DATE
1/06

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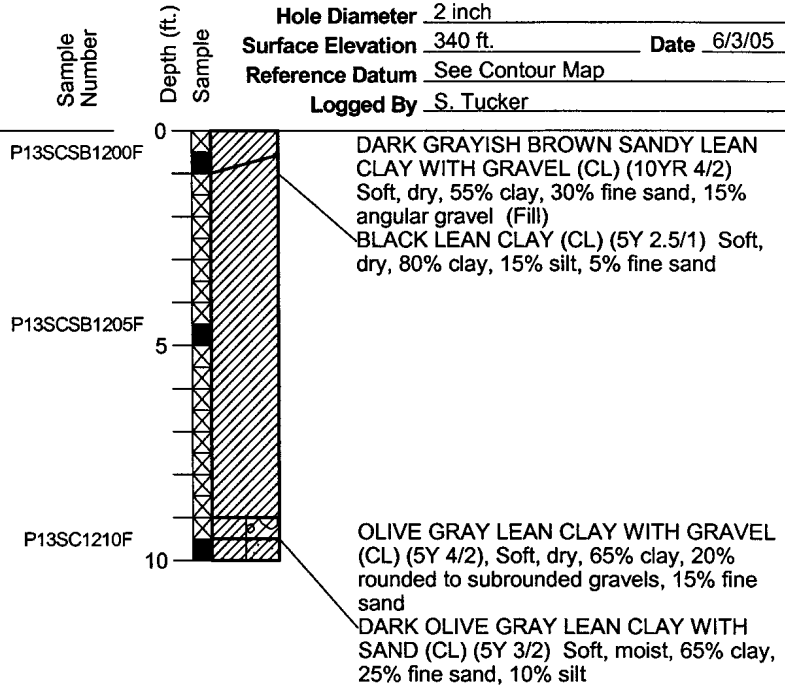
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BORING WELL MACTEC 3618048128 CAMP PARKS.GPJ GEOL.GDT 1/6/06



Equipment Geoprobe
 Sample Method Continuous Core
 Hole Diameter 2 inch
 Surface Elevation 340 ft. Date 6/3/05
 Reference Datum See Contour Map
 Logged By S. Tucker

GROUND SURFACE



BORING WELL MACTEC 3618048128_CAMP PARKS.GPJ GEOL.GDT 1/6/06

PLATE



Log of Boring P13SCSB12

PRFTA 13 Site Investigation
 Parks Reserve Forces Training Area
 Dublin, California

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DRAWN
CN

JOB NUMBER
3618048128 02

CHECKED

CHK'D DATE

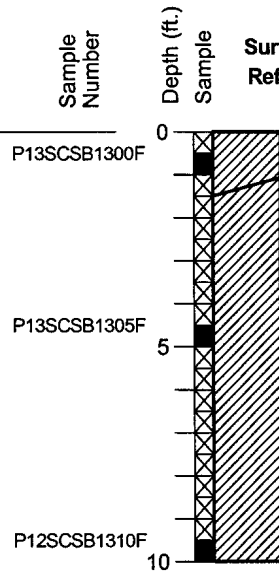
1/06

APPROVED

APPR'D DATE

Equipment Geoprobe
 Sample Method Continuous Core
 Hole Diameter 2 inch
 Surface Elevation 340 ft. Date 6/3/05
 Reference Datum See Contour Map
 Logged By S. Tucker

GROUND SURFACE



DARK GRAYISH BROWN SANDY LEAN
 WITH GRAVEL (CL) (10YR 4/2) Soft, dry,
 55% clay, 30% fine sand, 15% angular
 gravels (Fill)
 BLACK LEAN CLAY (CL) (5Y 2.5/1) Firm,
 dry, 80% clay, 15% silt, 5% fine sand
 @ 3 ft. Soft, dry
 @ 4 ft. Color change to DARK OLIVE
 GRAY (5Y 3/2)

BORING WELL MACTEC 3618048128 CAMPPARKS.GPJ GEOL.GDT 1/6/06

PLATE



Log of Boring P13SCSB13

PRFTA 13 Site Investigation
 Parks Reserve Forces Training Area
 Dublin, California

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DRAWN
 CN

JOB NUMBER
 3618048128 02

CHECKED
 1/06

CHCK'D DATE

APPROVED

APPR'D DATE

APPENDIX C

DRILLING AND WELL ABANDONMENT PERMITS



ALAMEDA COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT

100 NORTH CANYONS PARKWAY, LIVERMORE, CA 94551

PHONE (925) 454-5000

July 18, 2005

Ms. Beth Flynn
MACTEC Engineering and Consulting
5341 Old Redwood Highway, Suite 300
Petaluma, CA 94954

Dear Ms. Flynn:

Enclosed are drilling permits 25079, 25080, 25083 and 25086 for contamination investigations at the locations listed below:

Permit	Location	Well #
25079	Camp Parks (4 th St. & Fernandez Av), Dublin	16 hydropunch samplings
25080	Camp Parks (4 th St. & Fernandez Av), Dublin	13 soil borings
25083	Camp Parks (4 th St. & Fernandez Av), Dublin	3S/1E-6B25 to 3S/1E-6B29 monitoring wells
25086	Camp Parks (4 th St. & Fernandez Av), Dublin	3S/1E-6B5, 6B8, 6B10 to 6B13 (6 destructions)

Please note that permit condition A-2 and G requires that a report be submitted after completion of the work. The report should include drilling and completion logs, location sketch, permit number and any analysis of soil or water samples. Please submit the original of your completion report. We will forward your submittal to the California Department of Water Resources.

If you have any questions, please contact me at extension 5056 or Matt Katen at extension 5071.

Sincerely,

A handwritten signature in black ink that reads "Wyman Hong". The signature is written in a cursive, flowing style.

Wyman Hong
Water Resource Specialist

Enc.

05/12/2005 14:46

707-7933900

MACTEC

PAGE 05



ZONE / WATER AGENCY

5997 PARKSIDE DRIVE PLEASANTON, CALIFORNIA 94588-5127 VOICE (925) 484-2800 X235 FAX (925) 462-3914

DRILLING PERMIT APPLICATION

FOR APPLICANT TO COMPLETE

FOR OFFICE USE

LOCATION OF PROJECT Park Reserve Forces
Training Area (RETA) 4th St. &
Fernandez Ave Dublin Calif.

California Coordinates Source _____ Accuracy: _____ ft.
 CCN _____ ft. CDE _____ ft.
 APN _____

CLIENT

Name U.S. Army Environmental Center (USAEC) (A)
 Address ATTN: AFEG-FMC-ENV Phone 925-835-7483
 City Dublin State CA Zip _____

APPLICANT

Name MACTEC Engineering and Consulting
 Address 5241 Old Redwood Hwy Phone 925-793-3834
 City Suite 300 Petaluma CA Zip 94954

TYPE OF PROJECT:

Well Construction .. Geotechnical Investigation ..
 Well Destruction .. Contamination Investigation ..
 Cathodic Protection .. Other Hydropunch ..
Sampling

PROPOSED WELL USE:

Domestic .. Irrigation ..
 Municipal .. Remediation ..
 Industrial .. Groundwater Monitoring ..
 Dewatering .. Other ..

DRILLING METHOD:

Mud Rotary .. Air Rotary .. Hollow Stem Auger ..
 Cable Tool .. Direct Push X Other ..

DRILLING COMPANY

DRILLER'S LICENSE NO. _____

WELL SPECIFICATIONS:

Drill Hole Diameter _____ in. Maximum
 Casing Diameter _____ in. Depth _____ ft.
 Surface Seal Depth _____ ft. Number _____

SOIL BORINGS:

Number of Borings 1/6 Maximum
 Hole Diameter 2 in. Depth 35 ft.

ESTIMATED STARTING DATE May 23, 2005
 ESTIMATED COMPLETION DATE May 27, 2005

I hereby agree to comply with all requirements of this permit and Alameda
 County Ordinance No. 73-68.

APPLICANT'S

SIGNATURE Bethany P. Flynn Date 5/4/05

ATTACH SITE PLAN OR SKETCH

PERMIT NUMBER 25079

WELL NUMBER _____

APN _____

PERMIT CONDITIONS

Circled Permit Requirements Apply

GENERAL

1. A permit application should be submitted so as to arrive at the Zone 7 office five days prior to proposed starting date.
2. Submit to Zone 7 within 60 days after completion of permitted work the original Department of Water Resources Water Well Drillers Report or equivalent for well projects, or drilling logs and location sketch for geotechnical projects.
3. Permit is void if project not begun within 90 days of approval date.

B. WATER SUPPLY WELLS

1. Minimum surface seal diameter is four inches greater than the well casing diameter.
2. Minimum seal depth is 50 feet for municipal and industrial wells or 20 feet for domestic and irrigation wells unless a lesser depth is specially approved.
3. Grout placed by tremie.
4. An access port at least 0.5 inches in diameter is required on the wellhead for water level measurements.
5. A sample port is required on the discharge pipe near the wellhead.

C. GROUNDWATER MONITORING WELLS INCLUDING PIEZOMETERS

1. Minimum surface seal diameter is four inches greater than the well or piezometer casing diameter.
2. Minimum seal depth for monitoring wells is the maximum depth practicable or 20 feet.
3. Grout placed by tremie.

(D) GEOTECHNICAL. Backfill bore hole with compacted cuttings or heavy bentonite and upper two feet with compacted material. In areas of known or suspected contamination, tremied cement grout shall be used in place of compacted cuttings.

E. CATHODIC. Fill hole above anode zone with concrete placed by tremie.

F. WELL DESTRUCTION. See attached.

(G) SPECIAL CONDITIONS: Submit to Zone 7 within 60 days after completion of permitted work the well installation report including all soil and water laboratory analysis results.

Approved

Wymon Hong
 Wymon Hong

Date 5/23/05

05/12/2005 14:46 707-7933900

MATEC

PAGE 02



ZONE 7 WATER AGENCY

5997 PARKSIDE DRIVE PLEASANTON, CALIFORNIA 94588-5127 VOICE (925) 484-2600 X235 FAX (925) 462-3914

DRILLING PERMIT APPLICATION

FOR APPLICANT TO COMPLETE

FOR OFFICE USE

LOCATION OF PROJECT Park Reserve Forces
Training Area (REF) 9th St &
Fernandez Ave Dublin Calif

California Coordinates Source _____ Accuracy: _____ ft.
 CCR _____ ft. UCE _____ ft.
 APN _____

CLIENT

Name U.S. Army Environmental Center (USAEC)
 Address ATTN: DESS - ENGINEER Phone 925-835-4603
 City Dublin, CA Zip 94568-5201

APPLICANT

Name MATEC Engineering and Consulting
 Address 1060 Phone 707-793-3900
 City 5341 Old Redwood Hwy Phone 707-793-3834
 City Suite 200 Petaluma CA Zip 94954

TYPE OF PROJECT:

Well Construction .. Geotechnical Investigation ..
 Well Destruction .. Contamination Investigation ☒
 Cathodic Protection .. Other Soil Borings ..

PROPOSED WELL USE:

Domestic .. Irrigation ..
 Municipal .. Remediation ..
 Industrial .. Groundwater Monitoring ..
 Dewatering .. Other _____ ..

DRILLING METHOD:

Mud Rotary .. Air Rotary .. Hollow Stem Auger ..
 Cable Tool .. Direct Push .. Other _____ ..

DRILLING COMPANY

DRILLER'S LICENSE NO. _____

WELL SPECIFICATIONS:

Drill Hole Diameter _____ in. Maximum _____ ft.
 Casing Diameter _____ in. Depth _____ ft.
 Surface Seal Depth _____ ft. Number _____

SOIL BORINGS:

Number of Borings 13 Maximum _____ ft.
 Hole Diameter 2 in. Depth 15 ft.

ESTIMATED STARTING DATE May 23, 2005
 ESTIMATED COMPLETION DATE May 27, 2005

I hereby agree to comply with all requirements of this permit and Alameda
 County Ordinance No. 73-68.

APPLICANT'S

SIGNATURE Bethany P. Flynn Date 5/14/05

ATTACH SITE PLAN OR SKETCH

PERMIT NUMBER 25080
 WELL NUMBER _____
 APN _____

PERMIT CONDITIONS

Circled Permit Requirements Apply

(A) GENERAL

1. A permit application should be submitted so as to arrive at the Zone 7 office five days prior to proposed starting date.
2. Submit to Zone 7 within 60 days after completion of permitted work the original Department of Water Resources Water Well Drillers Report or equivalent for well projects, or drilling logs and location sketch for geotechnical projects.
3. Permit is void if project not begun within 90 days of approval date.

(B) WATER SUPPLY WELLS

1. Minimum surface seal diameter is four inches greater than the well casing diameter.
2. Minimum seal depth is 50 feet for municipal and industrial wells or 20 feet for domestic and irrigation wells unless a lesser depth is specially approved.
3. Grout placed by tremie.
4. An access port at least 0.5 inches in diameter is required on the wellhead for water level measurements.
5. A sample port is required on the discharge pipe near the wellhead.

(C) GROUNDWATER MONITORING WELLS INCLUDING PIEZOMETERS

1. Minimum surface seal diameter is four inches greater than the well or piezometer casing diameter.
2. Minimum seal depth for monitoring wells is the maximum depth practicable or 20 feet.
3. Grout placed by tremie.

(D) GEOTECHNICAL. Backfill bore hole with compacted cuttings or heavy bentonite and upper two feet with compacted material. In areas of known or suspected contamination, tremied cement grout shall be used in place of compacted cuttings.

(E) CATHODIC. Fill hole above anode zone with concrete placed by tremie.

(F) WELL DESTRUCTION. See attached.

(G) SPECIAL CONDITIONS: Submit to Zone 7 within 60 days after completion of permitted work the well installation report including all soil and water laboratory analysis results.

Approved Wyman Hong Date 5/23/05



ZONE 7 WATER AGENCY

100 NORTH CANYONS PARKWAY, LIVERMORE, CALIFORNIA 94551 VOICE (925) 454-5000 FAX (925) 454-5728

DRILLING PERMIT APPLICATION

FOR APPLICANT TO COMPLETE

FOR OFFICE USE

 LOCATION OF PROJECT Parks Reserve Forces
Training Area CREST 4th St &
Fernandez Ave Dublin Ca.

 California Coordinates Source _____ Accuracy: _____ ft.
 CCN _____ ILCE _____ ft.
 APN _____

CLIENT

 Name U.S. Army Environmental Data Center (USAEC)
 Address DMN: AFRC-PMC-Hwy Phone 925-825-9683
 City Building 340 Dublin Ca Zip 94568-5201

APPLICANT

 Name Master Engineering and
Consulting Inc. Fax 703-393-3900
 Address 5341 Old Redwood Hwy Phone 703-393-3534
 City Suite 300 Petaluma Ca Zip 94954

TYPE OF PROJECT:

Well Construction	..	Geotechnical Investigation	..
Well Destruction	<input checked="" type="checkbox"/>	Contamination Investigation	..
Cathodic Protection	..	Other	..

PROPOSED WELL USE:

Domestic	..	Irrigation	..
Municipal	..	Remediation	..
Industrial	..	Groundwater Monitoring	..
Dewatering	..	Other	..

DRILLING METHOD:

Mud Rotary	..	Air Rotary	..	Hollow Stem Auger	<input checked="" type="checkbox"/>
Cable Tool	..	Direct Push	..	Other	..

DRILLING COMPANY

DRILLER'S LICENSE NO. _____

WELL SPECIFICATIONS:

Drill Hole Diameter	_____ in.	Maximum	
Casing Diameter	_____ in.	Depth	_____ ft.
Surface Seal Depth	_____ ft.	Number	<u>6</u>

SOIL BORINGS:

Number of Borings	_____	Maximum	
Hole Diameter	_____ in.	Depth	_____ ft.

 ESTIMATED STARTING DATE May 23, 2005
 ESTIMATED COMPLETION DATE May 27, 2005

 I hereby agree to comply with all requirements of this permit and Alameda
 County Ordinance No. 73-68.

APPLICANT'S

 SIGNATURE Bethany P. Flynn Date 5/14/05

ATTACH SITE PLAN OR SKETCH

 PERMIT NUMBER 25086
 WELL NUMBER 3S/1E-6B5, 6B8, 6B10 to 6B13
 APN _____

PERMIT CONDITIONS

Circled Permit Requirements Apply

A. GENERAL

1. A permit application should be submitted so as to arrive at the Zone 7 office five days prior to proposed starting date.
2. Submit to Zone 7 within 60 days after completion of permitted work the original Department of Water Resources Water Well Drillers Report or equivalent for well projects, or drilling logs and location sketch for geotechnical projects.
3. Permit is void if project not begun within 90 days of approval date.

B. WATER SUPPLY WELLS

1. Minimum surface seal diameter is four inches greater than the well casing diameter.
2. Minimum seal depth is 50 feet for municipal and industrial wells or 20 feet for domestic and irrigation wells unless a lesser depth is specially approved.
3. Grout placed by tremie.
4. An access port at least 0.5 inches in diameter is required on the wellhead for water level measurements.
5. A sample port is required on the discharge pipe near the wellhead.

C. GROUNDWATER MONITORING WELLS INCLUDING PIEZOMETERS

1. Minimum surface seal diameter is four inches greater than the well or piezometer casing diameter.
2. Minimum seal depth for monitoring wells is the maximum depth practicable or 20 feet.
3. Grout placed by tremie.

D. GEOTECHNICAL. Backfill bore hole with compacted cuttings or heavy bentonite and upper two feet with compacted material. In areas of known or suspected contamination, tremied cement grout shall be used in place of compacted cuttings.

E. CATHODIC. Fill hole above anode zone with concrete placed by tremie.

F. WELL DESTRUCTION. See attached.

G. SPECIAL CONDITIONS. Submit to Zone 7 within 60 days after completion of permitted work the well installation report including all soil and water laboratory analysis results.Approved Wyman Hong Date 5/26/05

Wyman Hong

APPENDIX D

ANALYTICAL RESULTS

Level III Review Summary
Camp Parks
Columbia Analytical 2005

Soil and water samples were collected June 3-7, and July 15, 2005 and submitted under chain of custody (COC) to Columbia Analytical Laboratory in Redding, California for the following analyses:

- TPH-Diesel by EPA Test Method 8015B

The results of these 57 samples were reported by the laboratory under sample delivery group (SDG) numbers DF075, DF076, DF077, DF084, DF094 and DF369. The reported data were reviewed by the laboratory and Mactec Data Validation personnel. Mactec validation personnel reviewed the data for compliance with established laboratory control limits and method compliance in accordance with Environmental Protection Agency (EPA) Level III review. The following parameters are reviewed under the Level III review:

- Analytical holding time compliance
- Condition and preservation of samples upon release to laboratory
- Laboratory Quality Control sample results including method blanks, laboratory control spike (LCS) recoveries, matrix spike and matrix spike duplicate recoveries and surrogate recovery results
- Initial and continuous calibration results including ICV, CCV and CCB recoveries (where applicable)
- Field Quality Control sample results, including trip blanks, equipment blanks, and field duplicate samples (where applicable)
- COC and data report review for completeness

The following sections summarize the findings of the Level III review for each analytical method:

TPH-Diesel by EPA Test Method 8015B :

Analytical Holding Times:

- Project samples were analyzed within the method specified analytical holding times, extracted within 14 days and analyzed within 40 days.

Condition and Preservation of Samples

- Samples were received by the laboratory in good condition and within preservation criteria of 4° C with the following exceptions:
 - Soil samples from SDGs DF369, DF076, and DF077 were received in plastic sleeves rather than glass or metal. Per instructions from the MACTEC project manager, the laboratory proceeded with analysis.

Laboratory Quality Control Samples:

- Laboratory method blank samples analyzed with project samples were non-detect for target compounds.
- Laboratory Control Spike samples analyzed with project samples were within acceptance limits

- Matrix spike/matrix spike duplicate samples analyzed with project samples were within acceptance limits with the exception of the following:
 - The matrix spike recovery for sample P13SCSB0810F was outside of control limits. The diesel concentration in sample was 4 times greater than the spike amount used for QC samples and validation qualification was not necessary.
- Laboratory duplicate samples were not analyzed with this data set.
- Surrogate recoveries were within acceptance limits for project samples with the following exceptions:
 - Control criteria were exceeded for surrogates: Octacosane and Triacontane in sample P13SCB1100F. Due to presence of non-target background compounds accurate quantitation was not possible.
 - The control criteria for surrogates: Octacosane and Triacontane in samples P13SCGW111F and P13SCGW13F are not applicable. The analysis of these samples required a dilution which resulted in a surrogate concentration below the Method Reporting Limit (MRL)

Initial and Continuing Calibration Verification Results:

- Initial Calibration Verification (ICV) and Continuing Calibration Verification (CCV) results were within acceptance criteria with the following exceptions:
 - The upper control criterion was exceeded for surrogate Octacosane in CCV associated with SDGs DF075, DF077 and DF084. Surrogate results in associated samples and QC met acceptance criteria and validation qualification was not necessary.
 - The upper control criterion was exceeded for both surrogates Octacosane and Triacontane in SDG DF076. Surrogate results in associated samples and QC met acceptance criteria and validation qualification was not necessary.

Field Quality Control Samples:

- Trip blank samples were not submitted for analysis by this test method
- Equipment blank samples were not submitted for analysis by this test method
- Field duplicate samples were not submitted for analysis by this test method

Completeness:

- The chain of custody (COC) submitted with each shipment of samples was complete and free of errors with the following exceptions:
 - On COC #1110, the matrix of the samples was either unmarked or marked as water. The samples are soil matrix.
 - On COC #1116, date and time discrepancies were noted versus sample labels. Per instruction from the project manager, dates and times from COC were used.
- The laboratory reported results as requested on the COC for each shipment of samples, and is considered complete.
- The laboratory did not perform silica gel cleanup during preparation of soil samples as requested in the Quality Assurance Project Plan (QAPP). Samples were received and prepared prior to Columbia Analytical receiving QAPP.

Summary

The findings of the level III data review performed on the samples in this data set indicate that the data are usable as reported by the laboratory and of sufficient quality to support decisions.



AMENDMENT REPORT

Client: MACTEC INC.

Project: MACTEC/CAMP PARKS

Date: 8/9/2005

E-Data: NOT REQUIRED

Batch: DF075

Initiated By: Douglas Burnett

Tier: 3

Completed By: Douglas Burnett

Dept: CL SERV

Approved By: Douglas Burnett

REASON: Client Request

1. Amend case narrative to include comment about soil samples received in plastic sleeves rather than glass or metal
2. Amend case narrative to include comment on why Silica Gel cleanup was not performed.
3. Supply Chromatograms

COLUMBIA ANALYTICAL SERVICES, INC.

Client: MACTEC
Project: Camp Parks
Sample Matrix: Soil/Water

Service Request No.: DF075
Date Received: 6/4/05

CASE NARRATIVE

All analyses were performed consistent with the quality assurance program of Columbia Analytical Services, Inc. (CAS). This report contains analytical results for samples designated for Tier III validation deliverables.

Sample Receipt

One water sample and eighteen soil samples were received for analysis at Columbia Analytical Services on 6/4/05. The following discrepancies were noted upon initial sample inspection:

- On COC #1106 and #1107, several samples were denoted by the geographic identifier of '913'. The sample labels denoted the geographic identifier as 'P13'. Per instruction with the project manager on 6/6/05, all geographic identifiers should read 'P13'.
- Soil samples were received in plastic sleeves rather than glass or metal. Per instruction from the project manager on 6/6/05, proceed with analysis.

The samples were received in good condition and otherwise consistent with the accompanying chain of custody form. The samples were stored in a refrigerator at 4°C upon receipt at the laboratory.

Diesel Range Organics by EPA Method 8015B

Continuing Calibration Verification Exceptions:

The lower control criterion was exceeded for the following analytes in Continuing Calibration Verification (CCV) G062014 (6/22/05 02:47): Octacosane. The surrogate recoveries in all of the field samples as well as the blank and LCS analyzed in this sequence met acceptance criteria. Therefore, the data quality is not affected.

Surrogate Exceptions:

The upper control criterion was exceeded for the following surrogates in samples P13SCSB0110F and the matrix spike duplicates P13SCSB0110FMSD: Octacosane and Tetracontane. No target analytes were detected in the sample. The error associated with an elevated recovery equates to a high bias. The quality of the sample data is not significantly affected. No further corrective action was appropriate.

Elevated Method Reporting Limits:

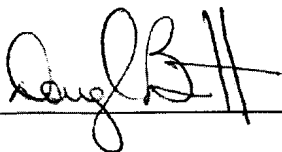
Sample P13SCSB0601F required dilution due to the presence of elevated levels of TPH-Diesel. The reporting limits are adjusted to reflect the dilution.

General Notes and Discussion:

Silica gel cleanup was not performed during preparation of these samples as requested in the QAPP. Samples were received into the laboratory on 6/4/05, prepared on 6/8/05; QAPP was received by CAS on 6/14/05.

Samples P13SCSB0601F and P13SCSB0105F contained an unknown hydrocarbon pattern within the Diesel Fuel range, but did not resemble Diesel Fuel. The samples were quantitated and reported as TPH-Diesel (C10-C24).

Approved by: _____



Date: 8-5-05

David Browne
MACTEC Inc.
5341 Old Redwood Highway
Suite 300
Petaluma, CA 94954

Columbia Analytical Services Report
Camp Parks Dublin
DF050075/DF075
37868

July 1, 2005

Submitted by:



Douglas Burnett
Project Manager/Client Services

The test results provided in this data package meet the requirements of the NELAC Standards unless noted in the case narrative report.

This report contains a total of 58 pages.

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CAS Lab Reference No.: DF075

Level III

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Current CAS Redding Accreditation Programs

Federal and National Programs

- U.S Air Force, Air Force Center for Environmental Excellence (AFCEE)
Approved laboratory for Wastewater and Hazardous Waste
- U.S. Army Corps of Engineers – MRD, HTRW Mandatory Center of Expertise
Validated for Wastewater and Hazardous Waste
- Department of the Navy, Naval Facilities Engineering Service Center (NFESC)
Approved laboratory for Wastewater and Hazardous Waste

State and Local Programs

- State of Arizona, Department of Health Services
Approved laboratory for Hazardous Waste
Lab ID# AZ0604
- State of Arkansas, Department of Environmental Quality
Approved laboratory for Wastewater and Hazardous Waste
Lab ID# None
- State of California, Department of Health Services, National Environmental Laboratory Accreditation Program (NELAP)
Approved laboratory for Drinking Water, Wastewater and Hazardous Waste
Lab ID# 01105CA
 - Los Angeles County Sanitation District
Approved laboratory for Wastewater
Lab ID# 10243
- State of Florida, Department of Health (NELAP)
Approved Environmental Testing Laboratory for Wastewater and Hazardous Waste
Lab ID# E87203
- State of Kansas, Department of Health and Environment (NELAP)
Approved laboratory for Hazardous Waste
Lab ID# E-10323
- State of Massachusetts, Department of Environmental Protection
Approved laboratory for Drinking Water, Wastewater
Lab ID# M-CA025
- State of Oklahoma, Department of Environmental Quality
Approved laboratory for General Water Quality/Sludge Testing
Lab ID# 9952
- State of Oregon, Department of Human Resources, Health Division (ORELAP)
Approved laboratory for Drinking Water, Wastewater, and Hazardous Waste
Lab ID# CA200004
- State of Utah, Department of Health, Division of Laboratory Services (NELAP)
Approved laboratory for Wastewater and Hazardous Waste
Lab ID# QUAL1
- State of Washington, Department of Ecology, Environmental Laboratory Accreditation Program
Approved laboratory for Wastewater and Hazardous Waste
Lab ID# C037
- State of Wisconsin, Department of Ecology
Approved laboratory for Wastewater and Hazardous Waste
Lab ID# 999767340

Organic Data Qualifiers

- A -- This qualifier indicates that a TIC is a suspected aldol-condensation product
- B -- This flag is used when the analyte is found in the associated blank as well as the sample. This notation indicates possible blank contamination and suggests that the data user evaluate these compounds and their amounts carefully.
- C -- The "C" flag indicates the presence of this compound has been confirmed by the GC/MS analysis.
- D -- This qualifier is used for all the compounds identified in an analysis at a secondary dilution factor. "D" qualifiers are used only for the samples reported at more than one dilution factor.
- E -- This flag indicates that the value reported exceeds the linear calibration range for that compound. Therefore, the sample should be reanalyzed at the appropriate dilution. The "E" qualified amount is an estimated concentration, and the results of the dilution will be reported on a separate Form I.
- I -- The qualifier indicates that the reporting limit to the "I" qualifier has been raised. It is used when the chromatographic interference prohibits detection of a compound at a level below the concentration expressed on the Form I.
- J -- Indicates an estimated value. It is used when the data indicates the presence of a target compound below the reporting limit or the presence of a Tentatively Identified Compound (TIC).
- N -- This qualifier indicates presumptive evidence of a compound. This flag is only used for Tentatively Identified Compounds (TIC), where the identification is based on a mass spectral library research. It is applied to all TIC results. For generic characterization of a TIC, such as chlorinated hydrocarbon, the "N" qualifier is not used.
- P -- This qualifier is used for target analytes when there is a greater than 40% difference for detected concentrations between the two columns or detectors. The concentration value is reported on Form I and flagged with a "P".
- U -- Indicates the compound was analyzed for but not detected. The number adjacent to the "U" qualifier indicates the reporting limit for that compound. The reporting limit can vary from sample to sample depending on dilution factors or percent moisture adjustments when indicated.

Organic Sample ID Qualifiers

The qualifiers that may be appended to the Lab Sample ID and/or the Client Sample ID for organic analysis are defined below:

- DL -- Diluted reanalysis. Indicates that the results were determined in an analysis of a secondary dilution of a sample or extract. A digit to indicate multiple dilutions of the sample or extract may follow the "DL" suffix. The results of more than one diluted reanalysis may be reported.
- MS -- Matrix spike (may be followed by a digit to indicate multiple matrix spikes within a sample set).
- MSD -- Matrix spike duplicate (may be followed by a digit to indicate multiple matrix spikes within a sample set).
- R -- Reanalysis. The extract was reanalyzed without re-extraction. The "R" is not used if the sample was also re-extracted. May be followed by a digit to indicate multiple reanalysis of the sample at the same dilution.
- RE -- Re-extraction analysis. The sample was re-extracted and reanalyzed. May be followed by a digit to indicate multiple re-extracted analysis of the same sample at the same dilution.

Sample ID Cross-reference Table

CAS Lab Sample ID	Client Sample ID	Receive Date	Collect Date	Sample Matrix	Additional Description
FS = Field Sample; MS = Matrix Spike; MSD = Matrix Spike Duplicate; NON = Non-Sample Type (Internal Admin)					
DF075001	FS P13SCSB0201F	06/04/05	06/03/05	09:55 Soil	
DF075002	FS P13SCSB0205F	06/04/05	06/03/05	10:00 Soil	
DF075003	FS P13SCSB0210F	06/04/05	06/03/05	10:10 Soil	
DF075004	FS P13SCSB0301F	06/04/05	06/03/05	10:15 Soil	
DF075005	FS P13SCSB0305F	06/04/05	06/03/05	10:25 Soil	
DF075006	FS P13SCSB0310F	06/04/05	06/03/05	10:30 Soil	
DF075007	FS P13SCSB0400F	06/04/05	06/03/05	10:40 Soil	
DF075008	FS P13SCSB0405F	06/04/05	06/03/05	10:45 Soil	
DF075009	FS P13SCSB0410F	06/04/05	06/03/05	10:50 Soil	
DF075010	FS P13SCSB0400R	06/04/05	06/03/05	11:10 Water	
DF075011	FS P13SCSB0601F	06/04/05	06/03/05	08:20 Soil	
DF075012	FS P13SCSB0605F	06/04/05	06/03/05	08:30 Soil	
DF075013	FS P13SCSB0610F	06/04/05	06/03/05	08:35 Soil	
DF075014	FS P13SCSB0501F	06/04/05	06/03/05	09:00 Soil	
DF075015	FS P13SCSB0505F	06/04/05	06/03/05	09:05 Soil	
DF075016	FS P13SCSB0510F	06/04/05	06/03/05	09:10 Soil	
DF075017	FS P13SCSB0100F	06/04/05	06/03/05	09:30 Soil	
DF075018	FS P13SCSB0105F	06/04/05	06/03/05	09:35 Soil	
DF075019	FS P13SCSB0110F	06/04/05	06/03/05	09:40 Soil	

The above lab sample ID's and cross reference information apply to samples as received by the laboratory. Modifiers to the lab sample ID may be added for internal tracking purposes. Any modified sample ID will be reflected in the appropriate case narrative only.

CASE NARRATIVE

COLUMBIA ANALYTICAL SERVICES, INC.

Client: MACTEC
Project: Camp Parks
Sample Matrix: Soil/Water

Service Request No.: DF075
Date Received: 6/4/05

CASE NARRATIVE

All analyses were performed consistent with the quality assurance program of Columbia Analytical Services, Inc. (CAS). This report contains analytical results for samples designated for Tier III validation deliverables.

Sample Receipt

One water sample and eighteen soil samples were received for analysis at Columbia Analytical Services on 6/4/05. No discrepancies were noted upon initial sample inspection. The samples were received in good condition and consistent with the accompanying chain of custody form. The samples were stored in a refrigerator at 4°C upon receipt at the laboratory.

Diesel Range Organics by EPA Method 8015B

Continuing Calibration Verification Exceptions:

The lower control criterion was exceeded for the following analytes in Continuing Calibration Verification (CCV) G062014 (6/22/05 02:47): Octacosane. The surrogate recoveries in all of the field samples as well as the blank and LCS analyzed in this sequence met acceptance criteria. Therefore, the data quality is not affected.

Surrogate Exceptions:

The upper control criterion was exceeded for the following surrogates in samples P13SCSB0110F and the matrix spike duplicates P13SCSB0110FMSD: Octacosane and Tetracontane. No target analytes were detected in the sample. The error associated with an elevated recovery equates to a high bias. The quality of the sample data is not significantly affected. No further corrective action was appropriate.

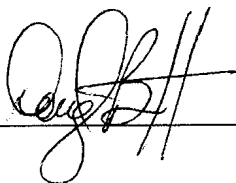
Elevated Method Reporting Limits:

Sample P13SCSB0601F required dilution due to the presence of elevated levels of TPH-Diesel. The reporting limits are adjusted to reflect the dilution.

Sample Notes and Discussion

Samples P13SCSB0601F and P13SCSB0105F contained an unknown hydrocarbon pattern within the Diesel Fuel range, but did not resemble Diesel Fuel. The samples were quantitated and reported as TPH-Diesel (C10-C24).

Approved by: _____



Date: _____

7-5-05

CHAIN OF CUSTODY DOCUMENTATION



5341 Old Redwood Highway
Suite 300
Petaluma, CA 94954
(707) 793-3800

SZ50148

CHAIN OF CUSTODY FORM

Seq. No.: No 1107

Samplers: David Browne/Scott Tucker

Lab: for Columbia

Job Number: 3618048128.02

Name/Location: CAMP PARK Dublin

Project Manager: Beth Flynn Recorder: David Browne
(Signature Required)

MATRIX				# CONTAINERS & PRESERV.				SAMPLE NUMBER				DATE			
Water	Soil	Air		Unpres.	H2SO4	HNO3	HCL		YR	SEQ		YR	MO	DAY	TIME
X				1					P1	35CSB0201	F	05	06	03	0955
X				1					P1	35CSB0205	F	05	06	03	1000
X				1					P1	35CSB0210	F	05	06	03	1010
X				1					91	35CSB0301	F	05	06	03	1015
X				1					91	35CSB0305	F	05	06	03	1025
X				1					91	35CSB0310	F	05	06	03	1030
X				1					91	35CSB0400	F	05	06	03	1040
X				1					91	35CSB0405	F	05	06	03	1045
X				1					91	35CSB0410	F	05	06	03	1050
X	X			2					91	35CSB0460	R	05	06	03	1110

ADDITIONAL INFORMATION												
SAMPLE NUMBER												
YR		SEQ										
												TURNAROUND TIME/ REMARKS
												STANDARD TAT

5250148

5341 Old Redwood Highway
Suite 300
Petaluma, CA 94954
(707) 793-3800

CHAIN OF CUSTODY FORM

Samplers: David Browne / Scott Tucker

Seq. No.: No 1106

Lab: Columbia Analytical

DF075 242

Job Number: 3618048128.02

Name/Location: CAMP Parks Dublin

Project Manager: Beth Flynn

Recorder: David Boone
(Signature Required)

MATRIX				# CONTAINERS & PRESERV.				SAMPLE NUMBER				DATE			
Water	Soil	Air		Unpres.	H2SO4	HNO3	HCL	YR	SEQ	YR	MO	DAY	TIME		
X				X				P1	3SCLSB0601F	05	06	03	0820		
X				1				P1	3SCLSB0605F	05	06	03	0830		
X				1				P1	3SCLSB0600F	05	06	03	0835		
X				1				P1	3SCLSB0501F	05	06	03	0900		
X				1				P1	3SCLSB0505F	05	06	03	0905		
X				1				P1	3SCLSB0510F	05	06	03	0910		
X				1				P1	3SCLSB0100F	05	06	03	0930		
X				1				P1	3SCLSB0105F	05	06	03	0935		
X				1				91	3SCLSB0110F	05	06	03	0940		

[illegible]

ANALYSIS REQUESTED	
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[illegible]

CHAIN OF CUSTODY RECORD			
Relinquished By (Signature)	(Print Name)	(Company)	Date/Time
<i>[Signature]</i>	David Browne	MACTEC	6/3/05 1630
Received By (Signature)	(Print Name)	(Company)	Date/Time
<i>[Signature]</i>	P. BINS	CAS	6/3/05 1630
Relinquished By (Signature)	(Print Name)	(Company)	Date/Time
<i>[Signature]</i>	P. BINS	CAS	6/3/05 1715
Received By (Signature)	(Print Name)	(Company)	Date/Time
<i>[Signature]</i>	SANCHEZ	CAS	6/4/05 1040
Relinquished By (Signature)	(Print Name)	(Company)	Date/Time
Received By (Signature)	(Print Name)	(Company)	Date/Time
Method of Shipment: VIA Fed-Ex			

COOLER RECEIPT FORM

Project/Client: MACTEC / CAMP PARKS Batch No.: DF075
1. Cooler(s)/Sample(s) received on: 6/4/05 Shipped via: FX
Shipping Bill # (s): 8358 1545 1150 # of Coolers/Packages 1
2. Radiological Screening by: [Signature] Acceptable Rejected
3. Custody seals on outside of cooler: YES NO N/A
If yes, where? Front ✓ Rear _____ Lt Side _____ Rt Side _____
Seals intact: YES NO

COOLER/SAMPLE PROCESSING

4. Sample Processing/Tagging by: [Signature]
5. Cooler(s)/Sample(s) Temp's: 4°C _____
(or)
Temp. Blank (if included): _____
6. Type of packing material (circle): Ice Blue Ice Bubble Wrap Bubble Bags Zip Locks Webbing
Other: _____
7. Custody papers properly filled out (ink, signed, dated, released, etc.)? YES NO
8. Containers arrived in good condition (not broken, leaking, etc.)? YES NO
9. Samples received with adequate holding time remaining to conduct analysis? YES NO
10. Container labels complete (i.e. analysis, preservation, date/time, etc.)? YES NO
11. Container labels and tags agree with custody papers? YES NO
12. Correct types of containers used for the tests indicated? YES NO
a.) Adequate sample received? If not, note on Exception Report. YES NO
13. Containers supplied by: CAS Other
14. Preserved containers received with the appropriate preservative? YES NO N/A
pH: _____ (or) See pH log.
15. VOA vials free of air bubbles? YES NO N/A
16. Trip Blank preparation date: _____ CAS Other N/A
17. Volatile Soil samples: Encores or Plugs in Vials
Freezer or GC/MS Date: _____ Time: _____ N/A

See Exception Report for discrepancies.

GC TPH DIESEL

Sample Data

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT ID.

P13SCSB0201F

Lab Name: COLUMBIA ANALYTICAL SERVICES - REDDING

Case No.: DF075 SDG No.: DF075

Lab Sample ID: DF075001

Matrix: SOIL Level: LOW

Lab File ID: F0620009

Sample Wt/Vol: 50.4 G

Date Collected: 06/03/05

Extract Vol: 1 ML

Date Extracted: 06/08/05

% Moisture: not dec. 23

Date Analyzed: 06/20/05

Extraction Type: SONICATION

Dilution Factor: 1.0

CAS NO.	COMPOUND	Units: mg/Kg	MDL	RL	RESULT	Q
	PHCC10C24---TPH-DIESEL (C10-C24)		0.82	13	3.4	J

Date : 20-JUN-2005 22:38

Client ID: P13SCSB0201F

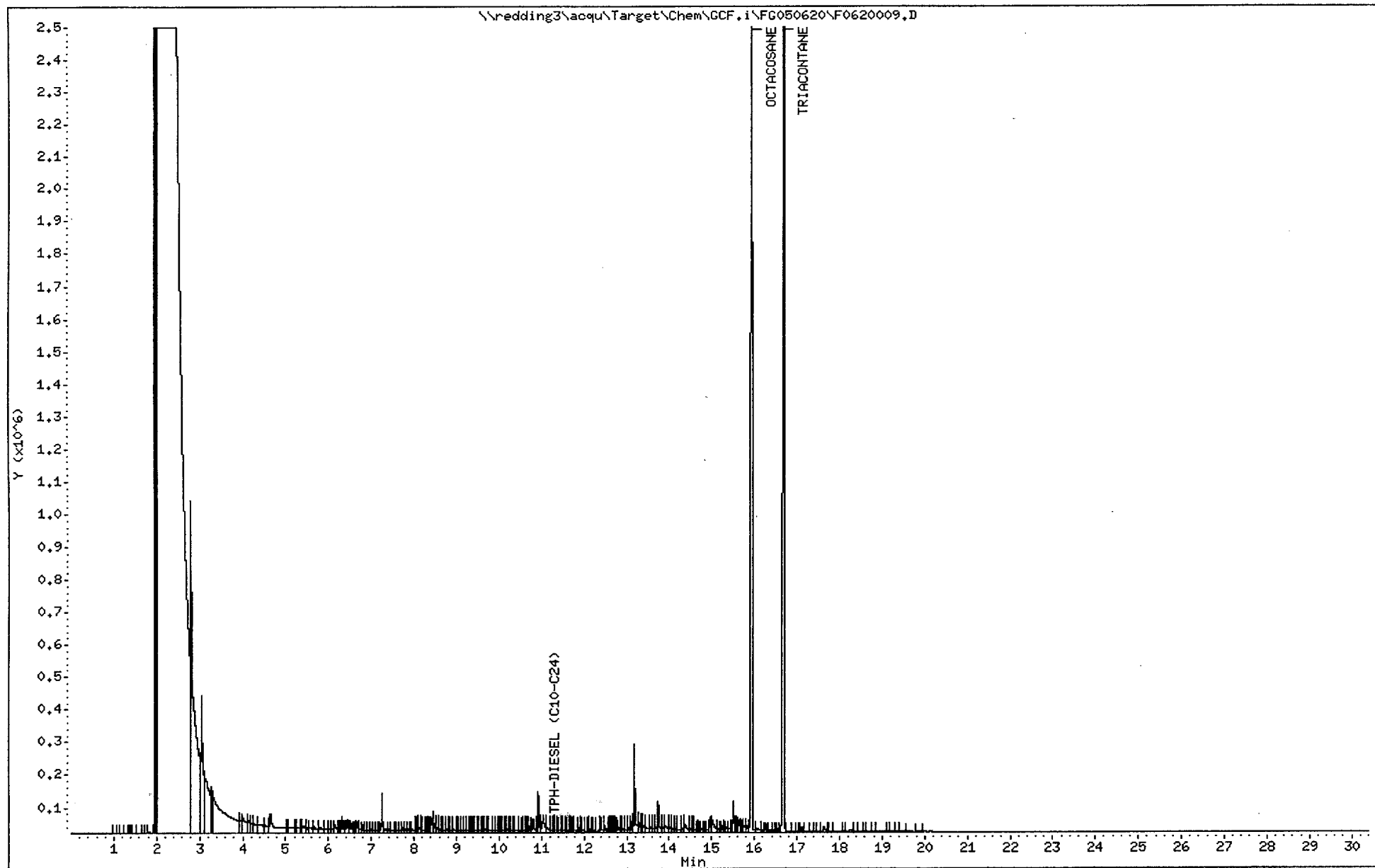
Sample Info: DF075001

Instrument: GCF.i

Operator:

Column diameter: 0.53

Column phase: RTX-5



1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT ID.

P13SCSB0205F

Lab Name: COLUMBIA ANALYTICAL SERVICES - REDDING

Case No.: DF075 SDG No.: DF075

Lab Sample ID: DF075002

Matrix: SOIL Level: LOW

Lab File ID: F0620010

Sample Wt/Vol: 50.5 G

Date Collected: 06/03/05

Extract Vol: 1 ML

Date Extracted: 06/08/05

% Moisture: not dec. 21

Date Analyzed: 06/20/05

Extraction Type: SONICATION

Dilution Factor: 1.0

CAS NO.	COMPOUND	Units: mg/Kg	MDL	RL	RESULT	Q
	PHCC10C24---TPH-DIESEL (C10-C24)		0.80	12	3.6	J

Data File: \\redding3\acqui\Target\Chem\GCF,i\FG050620\F0620010.D

Page 3

Date : 20-JUN-2005 23:18

Client ID: P13SCSB0205F

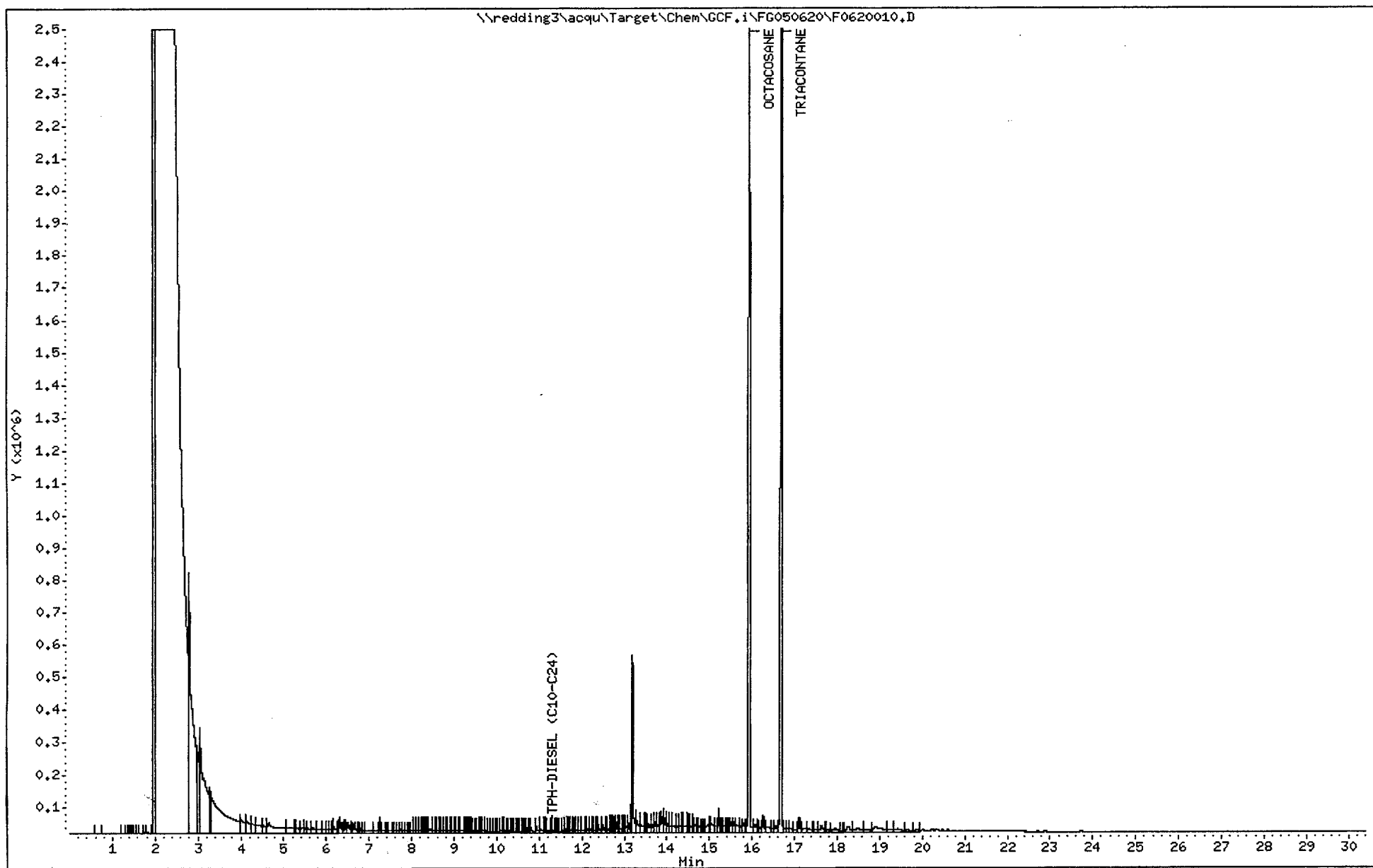
Sample Info: DF075002

Instrument: GCF.i

Operator:

Column diameter: 0.53

Column phase: RTX-5



1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT ID.

P13SCSB0210F

Lab Name: COLUMBIA ANALYTICAL SERVICES - REDDING

Case No.: DF075 SDG No.: DF075

Lab Sample ID: DF075003

Matrix: SOIL Level: LOW

Lab File ID: F0620011

Sample Wt/Vol: 50.4 G

Date Collected: 06/03/05

Extract Vol: 1 ML

Date Extracted: 06/08/05

% Moisture: not dec. 17

Date Analyzed: 06/20/05

Extraction Type: SONICATION

Dilution Factor: 1.0

CAS NO.	COMPOUND	Units: mg/Kg	MDL	RL	RESULT	Q
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PHCC10C24---TPH-DIESEL (C10-C24)_____	0.76	12	12	U
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Data File: \\redding3\acq\Target\Cr

Page 3

Date : 20-JUN-2005 23:57

Client ID: P13SCSB0210F

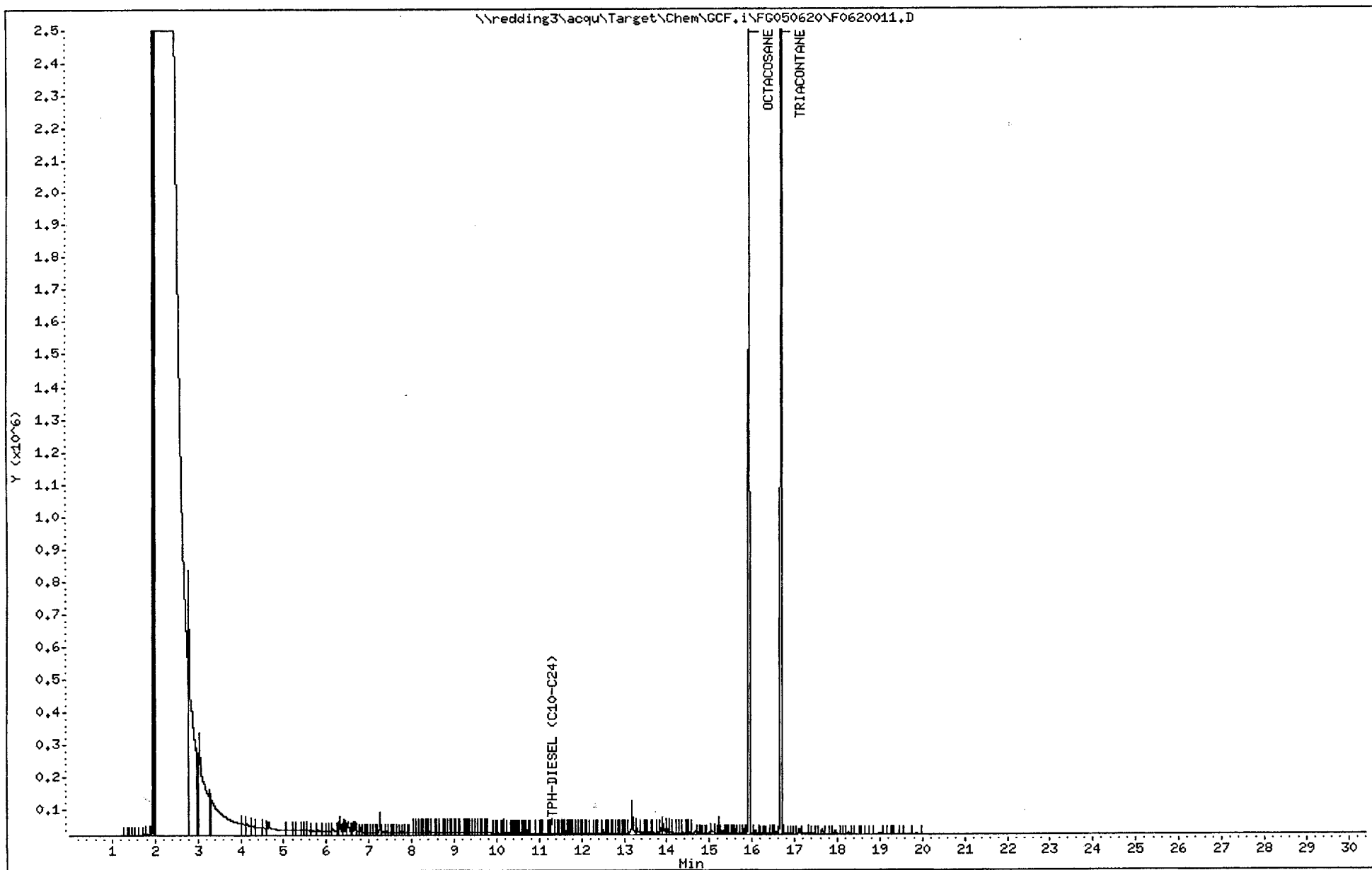
Sample Info: DF075003

Instrument: GCF.i

Operator:

Column phase: RTX-5

Column diameter: 0.53



1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT ID.

P13SCSB0301F

Lab Name: COLUMBIA ANALYTICAL SERVICES - REDDING

Case No.: DF075	SDG No.: DF075	Lab Sample ID: DF075004
Matrix: SOIL	Level: LOW	Lab File ID: F0620012
Sample Wt/Vol: 49.8 G		Date Collected: 06/03/05
Extract Vol: 1 ML		Date Extracted: 06/08/05
% Moisture: not dec. 26		Date Analyzed: 06/21/05
Extraction Type: SONICATION		Dilution Factor: 1.0

CAS NO.	COMPOUND	Units: mg/Kg	MDL	RL	RESULT	Q
	PHCC10C24---TPH-DIESEL (C10-C24)		0.86	14	14	U

Date : 21-JUN-2005 00:37

Client ID: P13SCSB0301F

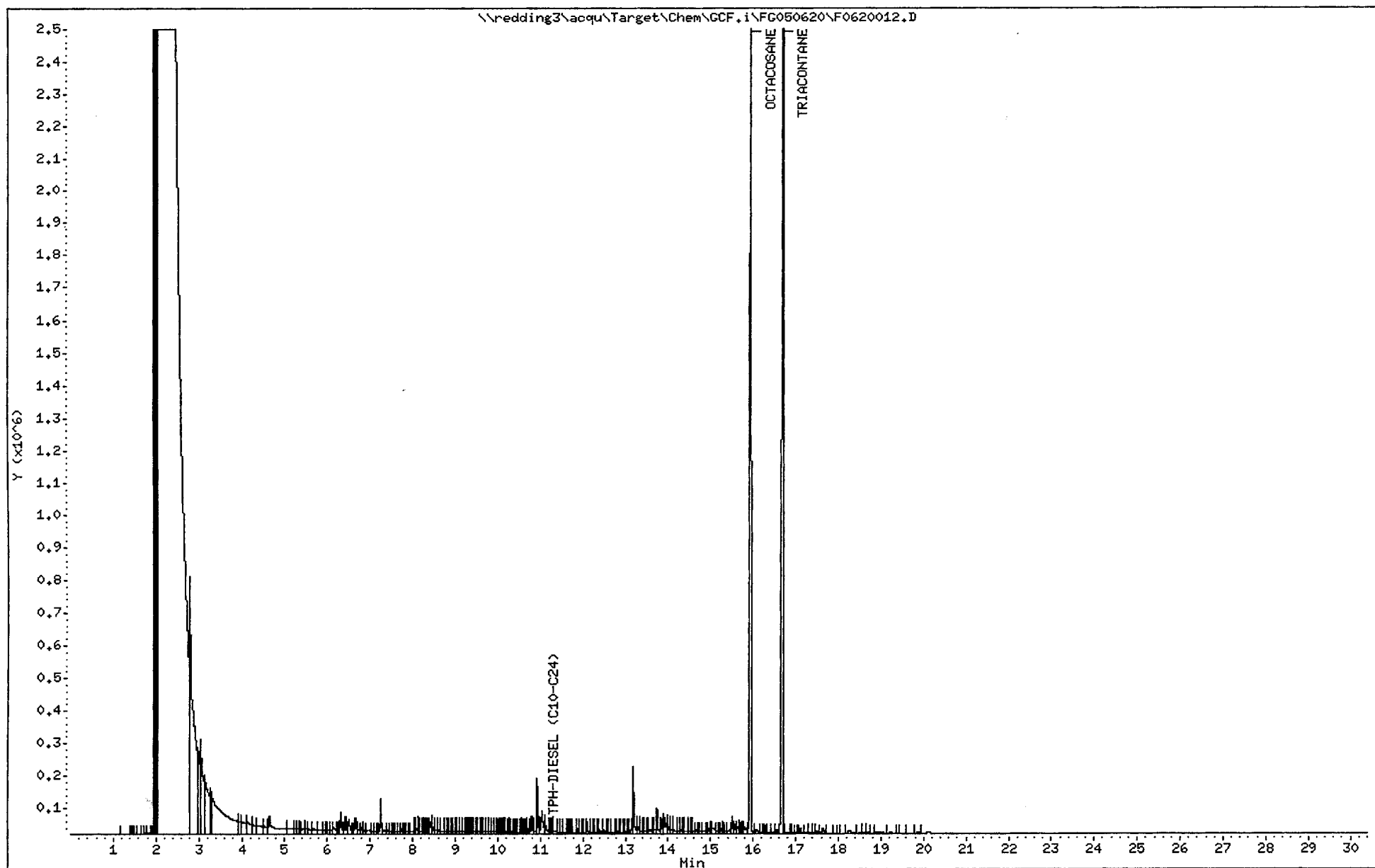
Sample Info: DF075004

Instrument: GCF.i

Operator:

Column phase: RTX-5

Column diameter: 0.53



1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT ID.

P13SCSB0305F

Lab Name: COLUMBIA ANALYTICAL SERVICES - REDDING

Case No.: DF075 SDG No.: DF075

Lab Sample ID: DF075005

Matrix: SOIL Level: LOW

Lab File ID: F0620013

Sample Wt/Vol: 50.6 G

Date Collected: 06/03/05

Extract Vol: 1 ML

Date Extracted: 06/08/05

% Moisture: not dec. 24

Date Analyzed: 06/21/05

Extraction Type: SONICATION

Dilution Factor: 1.0

CAS NO.	COMPOUND	Units: mg/Kg	MDL	RL	RESULT	Q
	PHCC10C24---TPH-DIESEL (C10-C24)		0.83	13	13	U

Data File: \\redding3\acqu\Target\Cl

Page 3

Date : 21-JUN-2005 01:16

Client ID: P13SCSB0305F

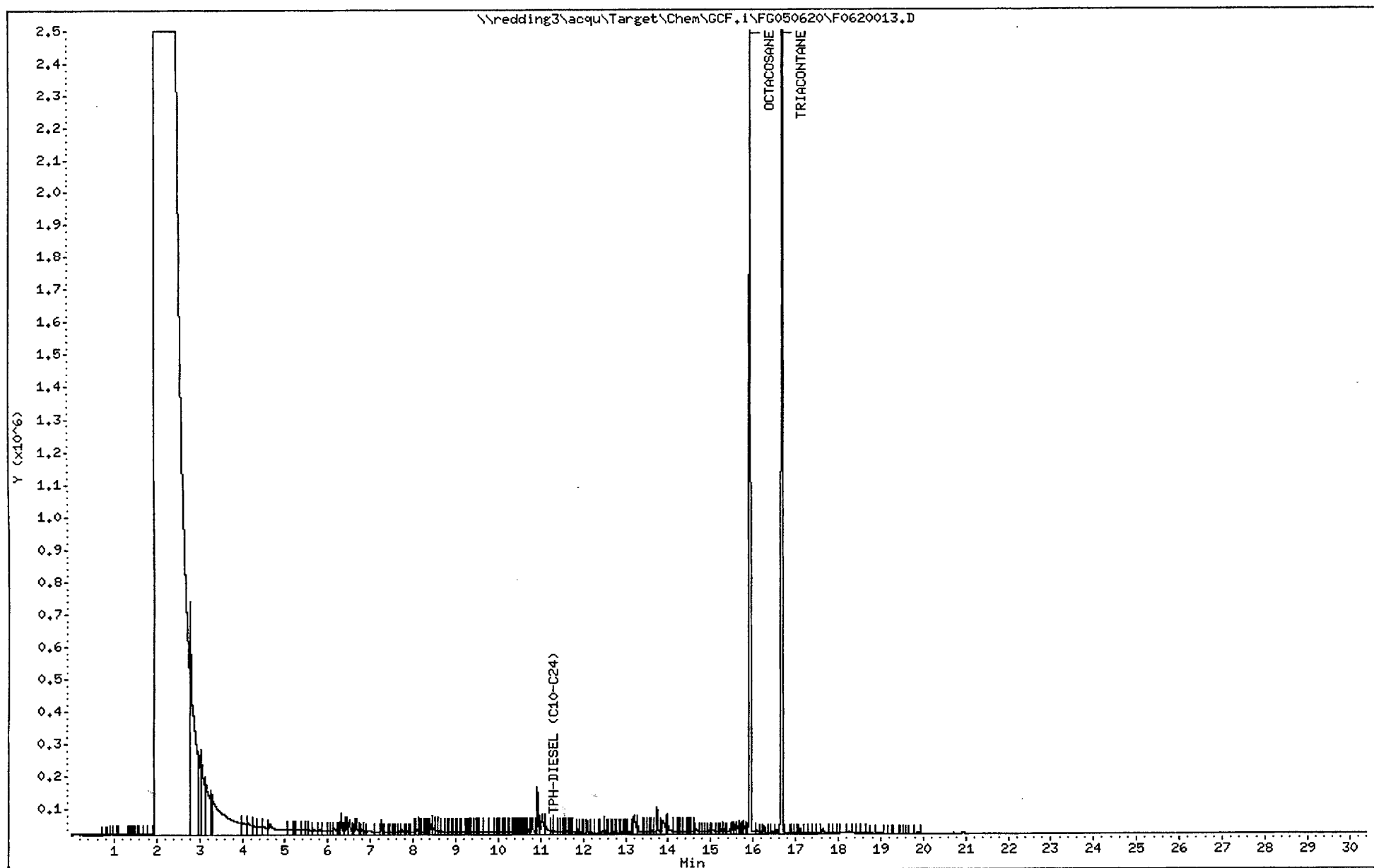
Sample Info: DF075005

Instrument: GCF.i

Operator:

Column phase: RTX-5

Column diameter: 0.53



1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT ID.

P13SCSB0310F

Lab Name: COLUMBIA ANALYTICAL SERVICES - REDDING

Case No.: DF075 SDG No.: DF075

Lab Sample ID: DF075006

Matrix: SOIL Level: LOW

Lab File ID: F0620014

Sample Wt/Vol: 50.1 G

Date Collected: 06/03/05

Extract Vol: 1 ML

Date Extracted: 06/08/05

% Moisture: not dec. 19

Date Analyzed: 06/21/05

Extraction Type: SONICATION

Dilution Factor: 1.0

CAS NO.	COMPOUND	Units: mg/Kg	MDL	RL	RESULT	Q
PHCC10C24	---TPH-DIESEL (C10-C24)		0.78	12	12	U

Date : 21-JUN-2005 01:56

Client ID: P13SCSB0310F

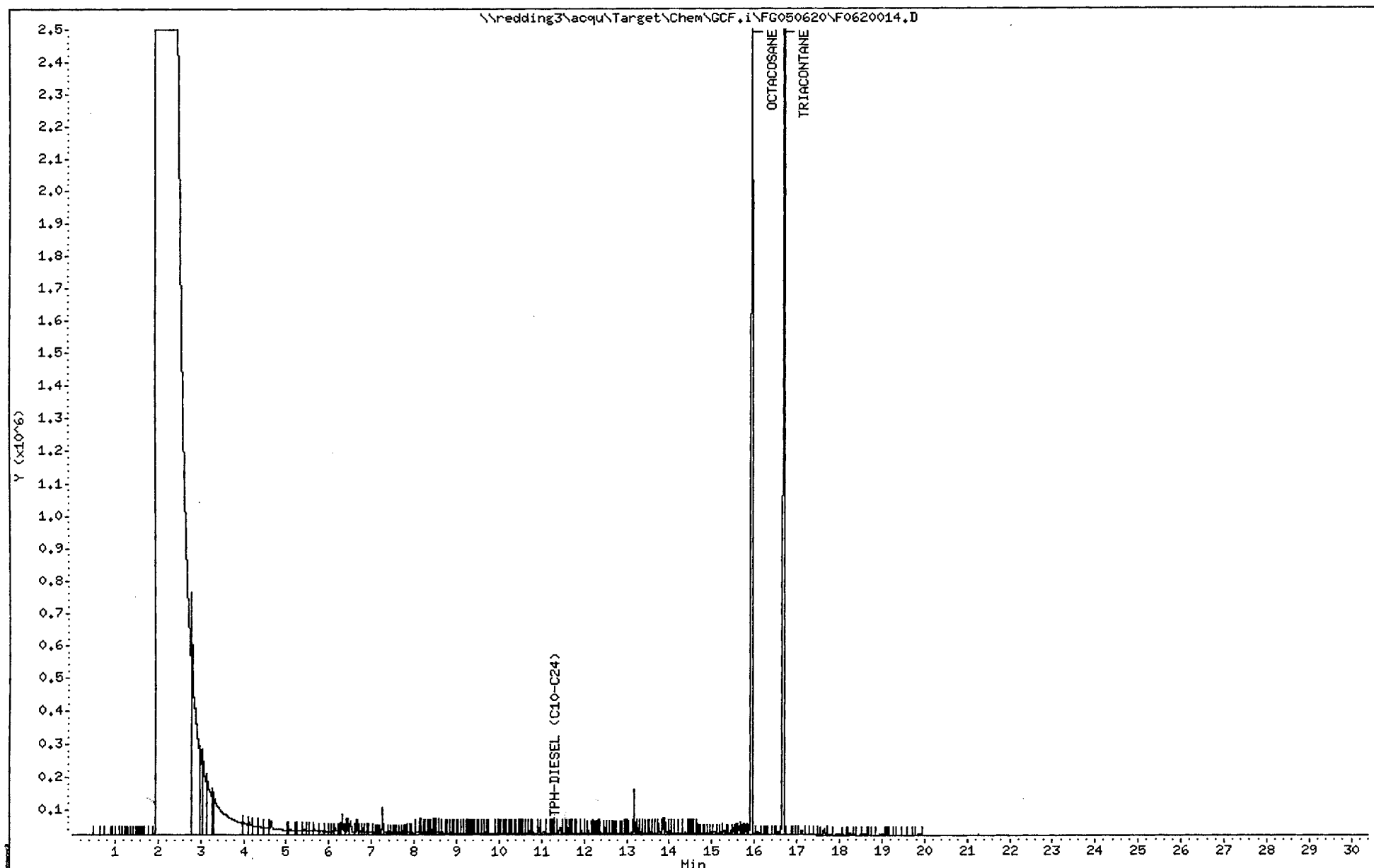
Sample Info: DF075006

Instrument: GCF.i

Operator:

Column phase: RTX-5

Column diameter: 0.53



1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT ID.

P13SCSB0400F

Lab Name: COLUMBIA ANALYTICAL SERVICES - REDDING

Case No.: DF075 SDG No.: DF075

Lab Sample ID: DF075007

Matrix: SOIL Level: LOW

Lab File ID: F0620015

Sample Wt/Vol: 49.4 G

Date Collected: 06/03/05

Extract Vol: 1 ML

Date Extracted: 06/08/05

% Moisture: not dec. 19

Date Analyzed: 06/21/05

Extraction Type: SONICATION

Dilution Factor: 1.0

CAS NO.	COMPOUND	Units: mg/Kg	MDL	RL	RESULT	Q
PHCC10C24	---TPH-DIESEL (C10-C24)		0.79	12	12	U

Data File: \\redding3\acqu\Target\Ch

Page 3

Date : 21-JUN-2005 02:36

Client ID: P13SCSB0400F

Sample Info: DF075007

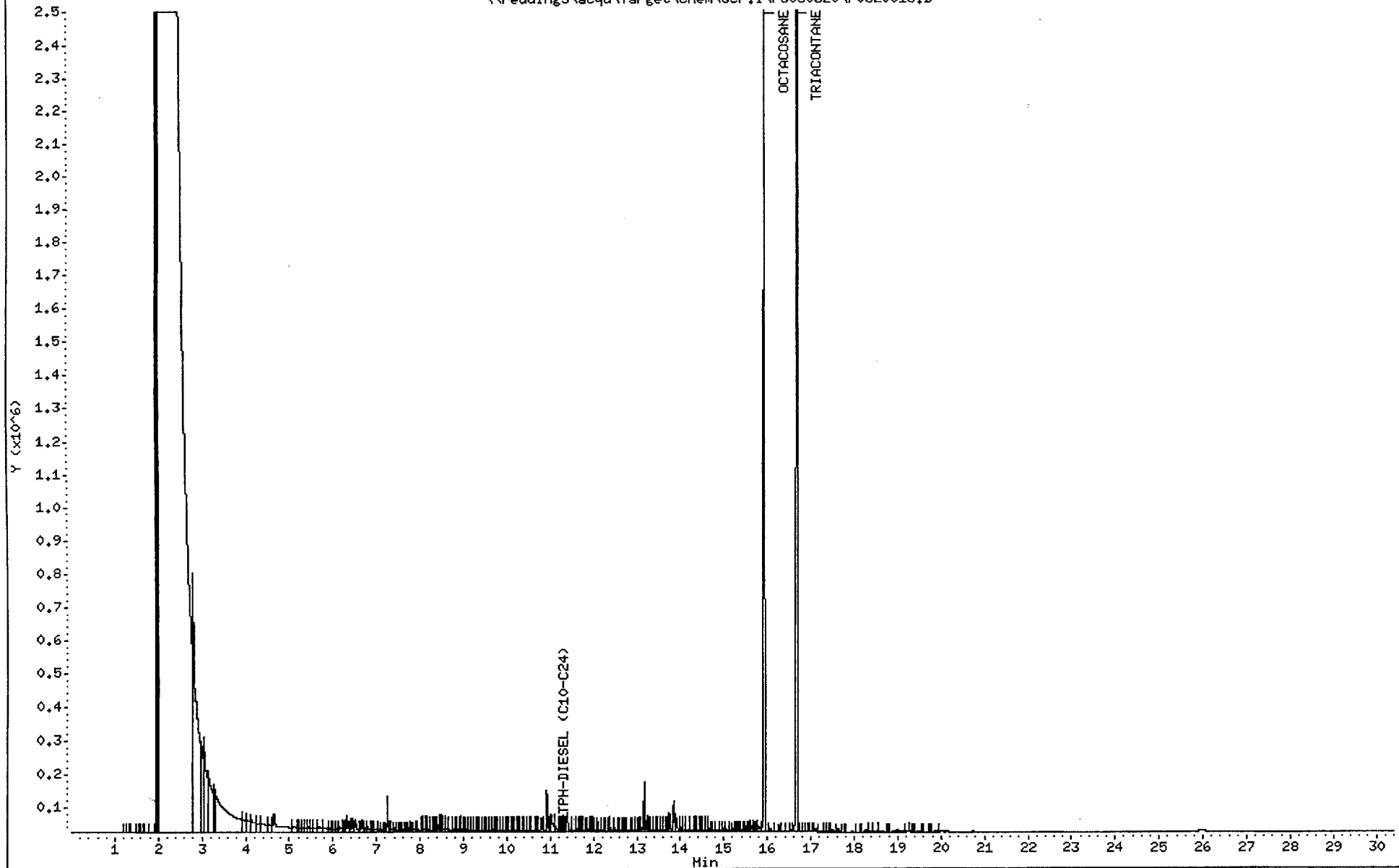
Instrument: GCF.i

Operator:

Column diameter: 0.53

Column phase: RTX-5

\\redding3\acqu\Target\Chem\GCF.i\FG050620\F0620015.D



1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT ID.

P13SCSB0405F

Lab Name: COLUMBIA ANALYTICAL SERVICES - REDDING

Case No.: DF075 SDG No.: DF075

Lab Sample ID: DF075008

Matrix: SOIL Level: LOW

Lab File ID: F0620017

Sample Wt/Vol: 50.5 G

Date Collected: 06/03/05

Extract Vol: 1 ML

Date Extracted: 06/08/05

% Moisture: not dec. 31

Date Analyzed: 06/21/05

Extraction Type: SONICATION

Dilution Factor: 1.0

CAS NO.	COMPOUND	Units: mg/Kg	MDL	RL	RESULT	Q
	PHCC10C24---TPH-DIESEL (C10-C24)		0.91	14	14	U

Data File: \\redding3\acqui\Target\Chem\GCF.i\FG050620\F0620017.D

Page 3

Date : 21-JUN-2005 03:55

Client ID: P13SCSB0405F

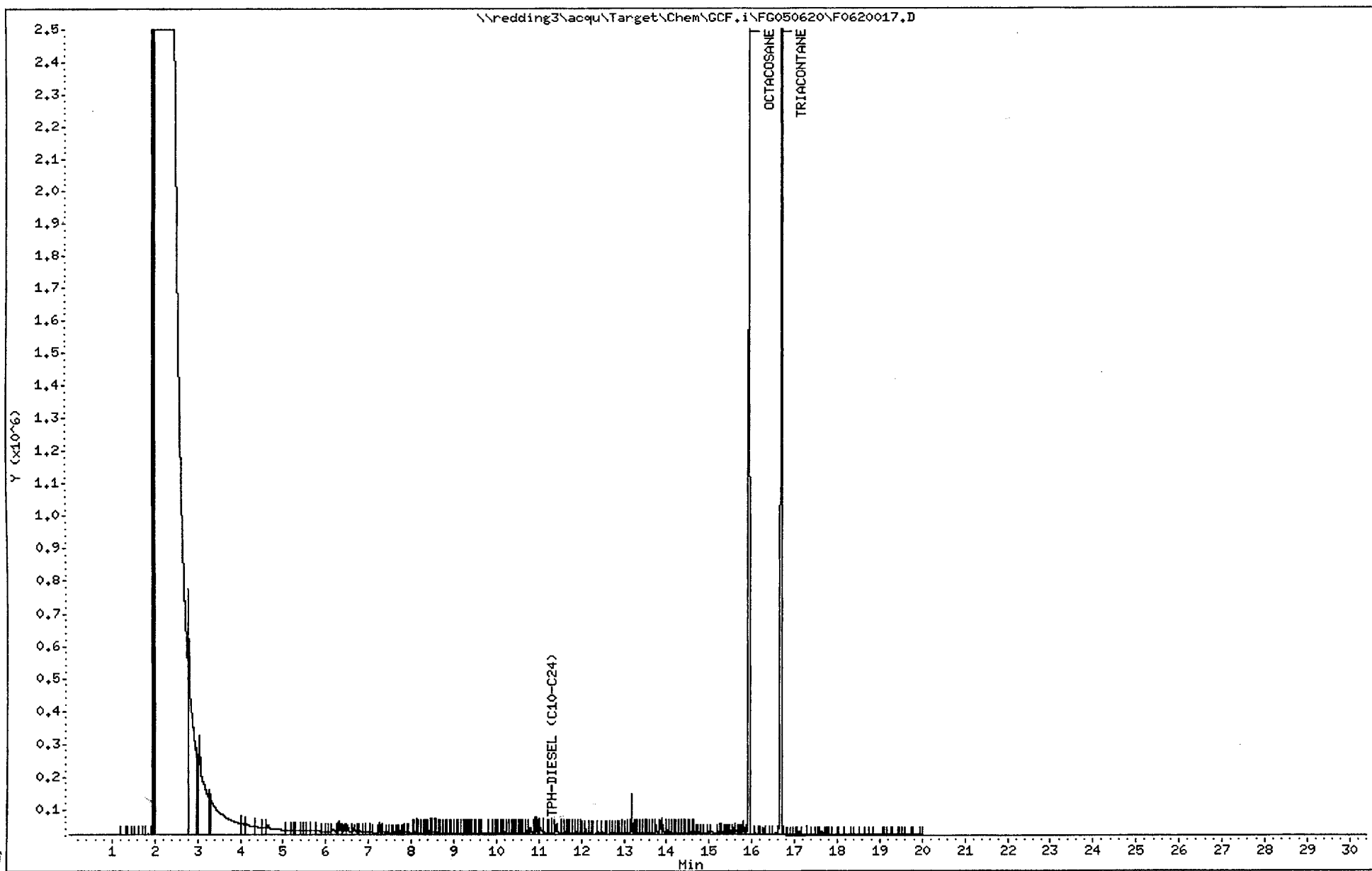
Sample Info: DF075008

Instrument: GCF.i

Operator:

Column diameter: 0.53

Column phase: RTX-5



1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT ID.

P13SCSB0410F

Lab Name: COLUMBIA ANALYTICAL SERVICES - REDDING

Case No.: DF075 SDG No.: DF075

Lab Sample ID: DF075009

Matrix: SOIL Level: LOW

Lab File ID: F0620018

Sample Wt/Vol: 49.9 G

Date Collected: 06/03/05

Extract Vol: 1 ML

Date Extracted: 06/08/05

% Moisture: not dec. 21

Date Analyzed: 06/21/05

Extraction Type: SONICATION

Dilution Factor: 1.0

CAS NO.	COMPOUND	Units: mg/Kg	MDL	RL	RESULT	Q
PHCC10C24	---TPH-DIESEL (C10-C24)		0.80	13	13	U

Date : 21-JUN-2005 04:34

Client ID: P13SCSB0410F

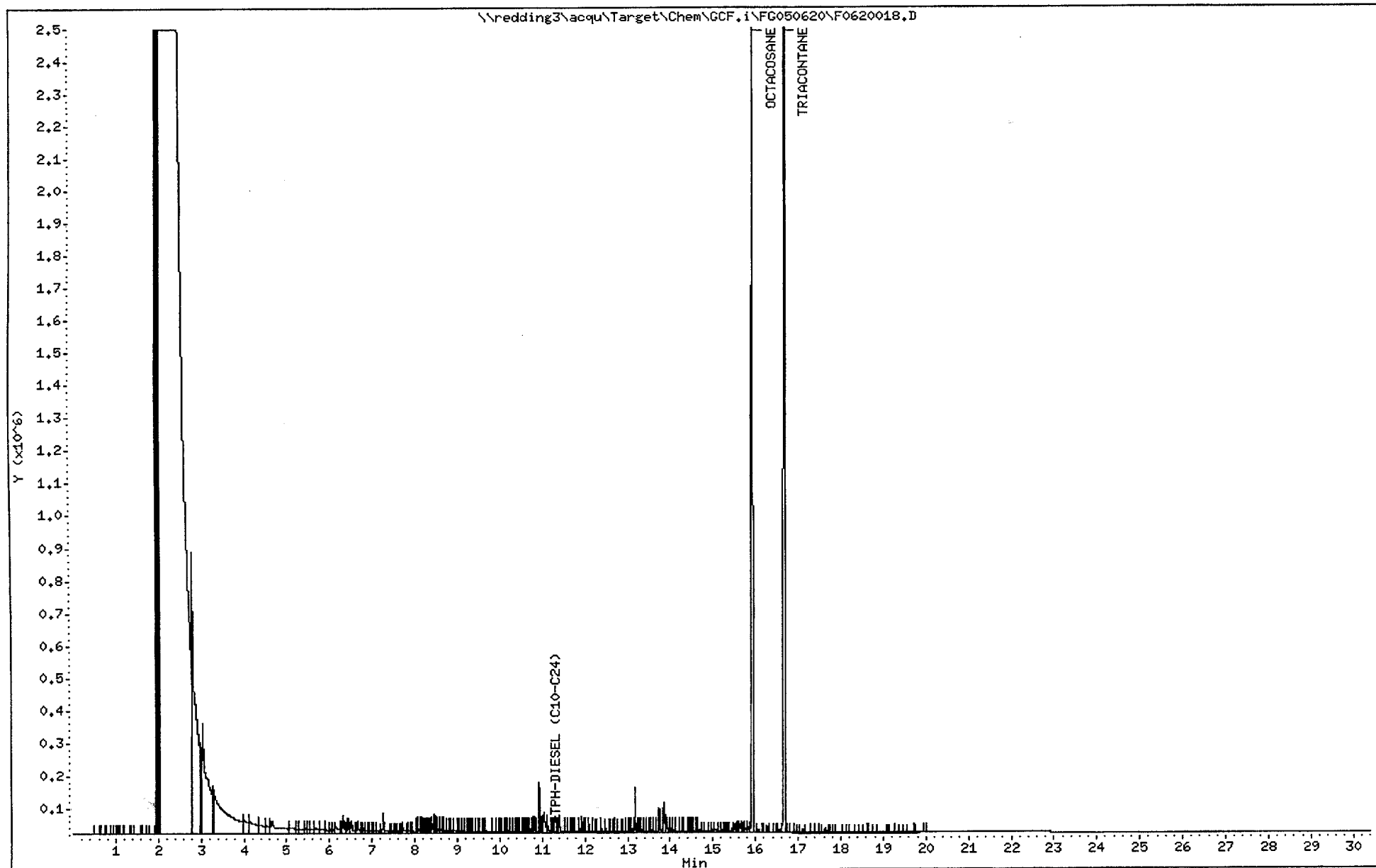
Sample Info: DF075009

Instrument: GCF.i

Operator:

Column diameter: 0.53

Column phase: RTX-5



1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT ID.

P13SCSB0400R

Lab Name: COLUMBIA ANALYTICAL SERVICES - REDDING

Case No.: DF075 SDG No.: DF075

Lab Sample ID: DF075010

Matrix: WATER Level: LOW

Lab File ID: G0621007

Sample Wt/Vol: 1.020 L

Date Collected: 06/03/05

Extract Vol: 1 ML

Date Extracted: 06/09/05

Date Analyzed: 06/21/05

Extraction Type: SEP FUNNEL

Dilution Factor: 1.0

CAS-NO.	COMPOUND	Units: mg/L	MDL	RL	RESULT	Q
	PHCC10C24---TPH-DIESEL (C10-C24)		0.018	0.10	0.10	U

Date : 21-JUN-2005 22:09

Client ID: P13SCSB0400R

Sample Info: DF075010

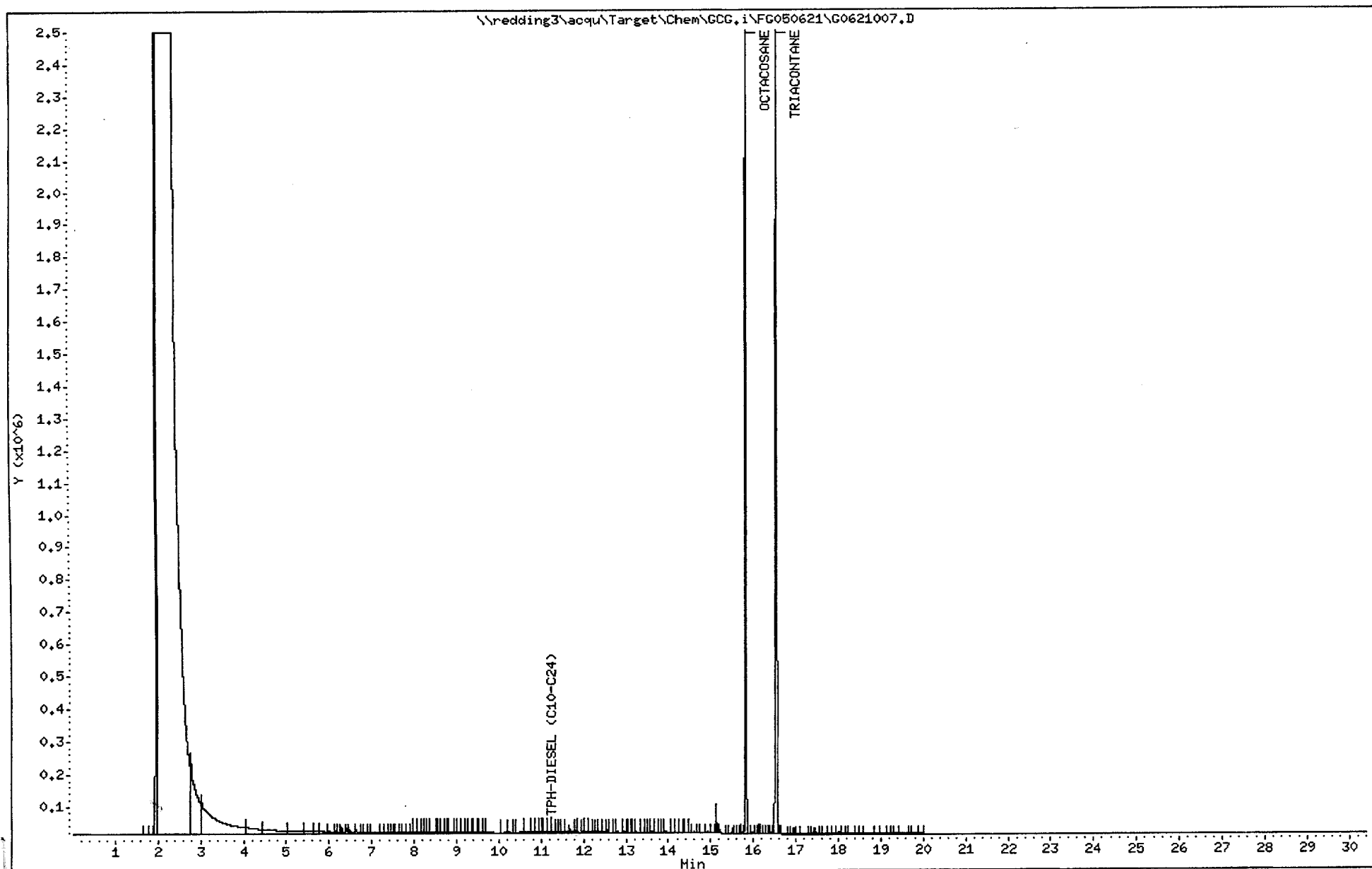
Purge Volume: 1.0

Column phase: RTX-5

Instrument: GCG.i

Operator:

Column diameter: 0.53



1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT ID.

P13SCSB0601F

Lab Name: COLUMBIA ANALYTICAL SERVICES - REDDING

Case No.: DF075 SDG No.: DF075

Lab Sample ID: DF075011

Matrix: SOIL Level: LOW

Lab File ID: F0620019

Sample Wt/Vol: 50.0 G

Date Collected: 06/03/05

Extract Vol: 1 ML

Date Extracted: 06/08/05

% Moisture: not dec. 26

Date Analyzed: 06/21/05

Extraction Type: SONICATION

Dilution Factor: 2.0

CAS NO.	COMPOUND	Units: mg/Kg	MDL	RL	RESULT	Q
	PHCC10C24---TPH-DIESEL (C10-C24)		1.7	27	93	

FORM I SV-1

SW846 SW8015

Data File: \\redding3\acqu\Target\Ch

Page 3

Date : 21-JUN-2005 05:14

Client ID: P13SCSB0601F

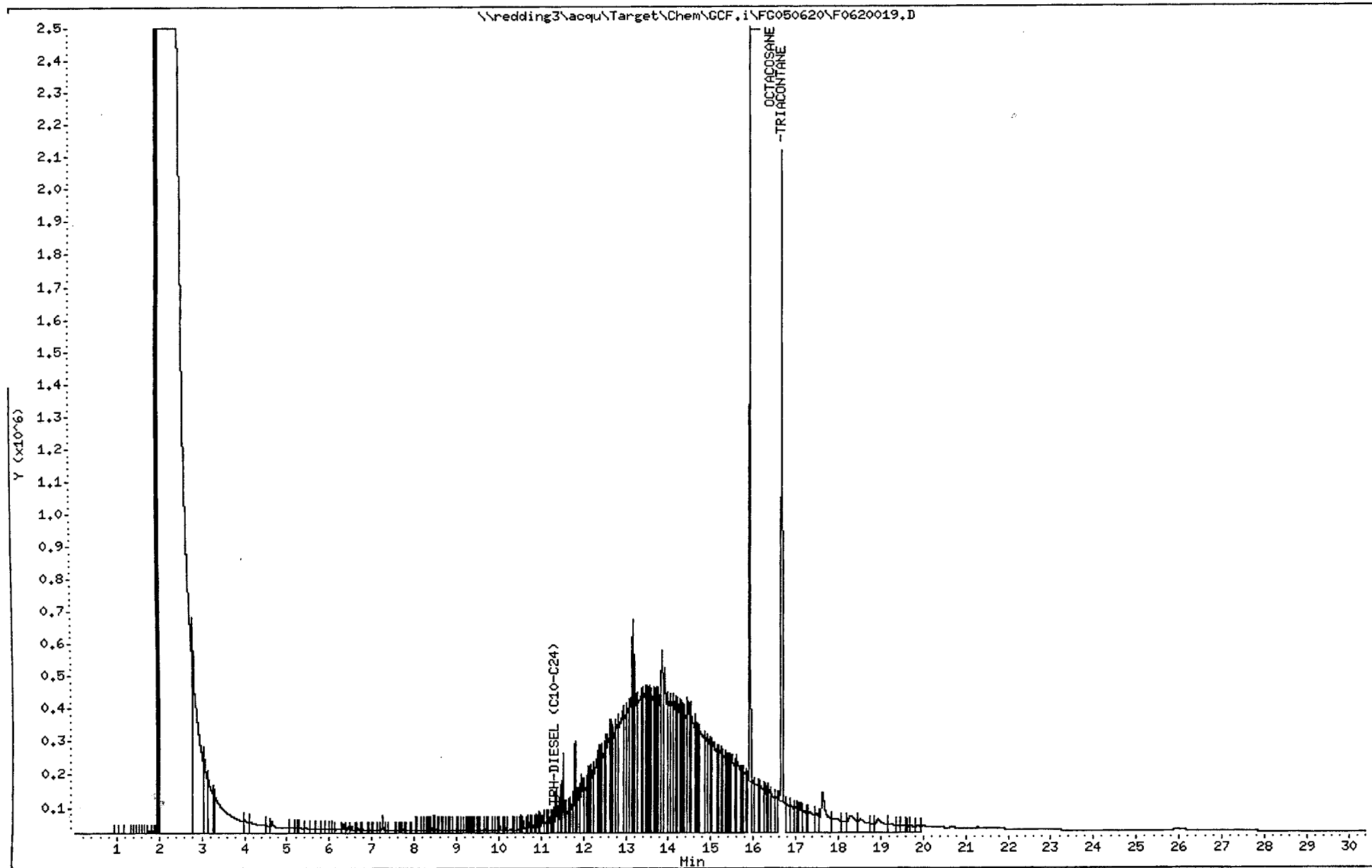
Sample Info: DF075011

Instrument: GCF.i

Operator:

Column diameter: 0.53

Column phase: RTX-5



1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT ID.

P13SCSB0605F

Lab Name: COLUMBIA ANALYTICAL SERVICES - REDDING

Case No.: DF075	SDG No.: DF075	Lab Sample ID: DF075012
Matrix: SOIL	Level: LOW	Lab File ID: F0620021
Sample Wt/Vol: 50.4 G		Date Collected: 06/03/05
Extract Vol: 1 ML		Date Extracted: 06/08/05
% Moisture: not dec. 22		Date Analyzed: 06/21/05
Extraction Type: SONICATION		Dilution Factor: 1.0

CAS NO.	COMPOUND	Units: mg/Kg	MDL	RL	RESULT	Q
	PHCC10C24---TPH-DIESEL (C10-C24)		0.81	13	5.0	J

Data File: \\redding3\acqu\Target\Ch

Page 3

Date : 21-JUN-2005 06:33

Client ID: P13SCSB0605F

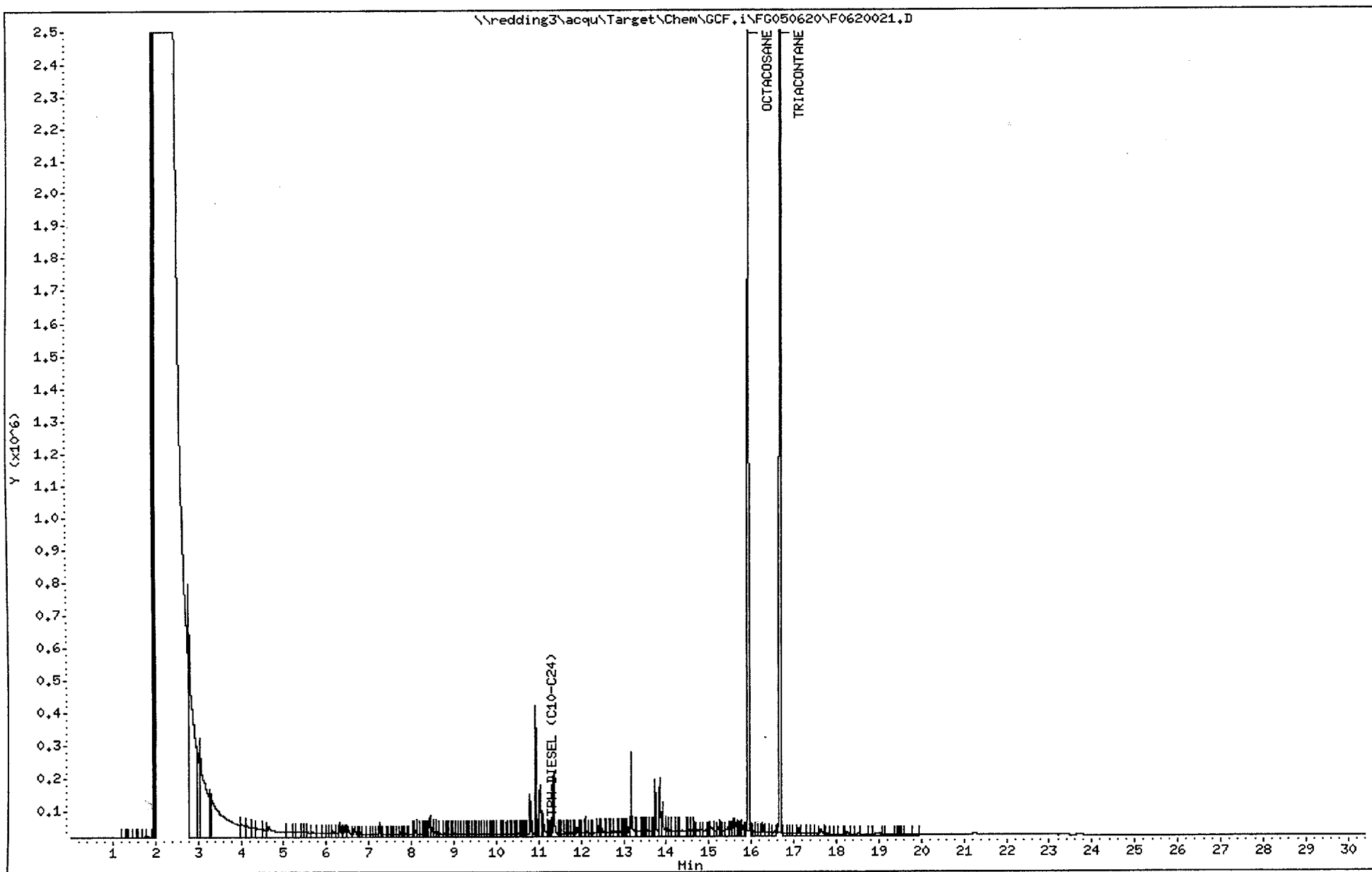
Sample Info: DF075012

Instrument: GCF.i

Operator:

Column diameter: 0.53

Column phase: RTX-5



1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT ID.

P13SCSB0610F

Lab Name: COLUMBIA ANALYTICAL SERVICES - REDDING

Case No.: DF075 SDG No.: DF075

Lab Sample ID: DF075013

Matrix: SOIL Level: LOW

Lab File ID: F0620022

Sample Wt/Vol: 50.2 G

Date Collected: 06/03/05

Extract Vol: 1 ML

Date Extracted: 06/08/05

% Moisture: not dec. 22

Date Analyzed: 06/21/05

Extraction Type: SONICATION

Dilution Factor: 1.0

CAS NO.	COMPOUND	Units: mg/Kg	MDL	RL	RESULT	Q
PHCC10C24---TPH-DIESEL (C10-C24)		0.81	13	5.9	J	

Data File: \\redding3\acqu\Target\Ch

Page 3

Date : 21-JUN-2005 07:13

Client ID: P13SCSB0610F

Sample Info: DF075013

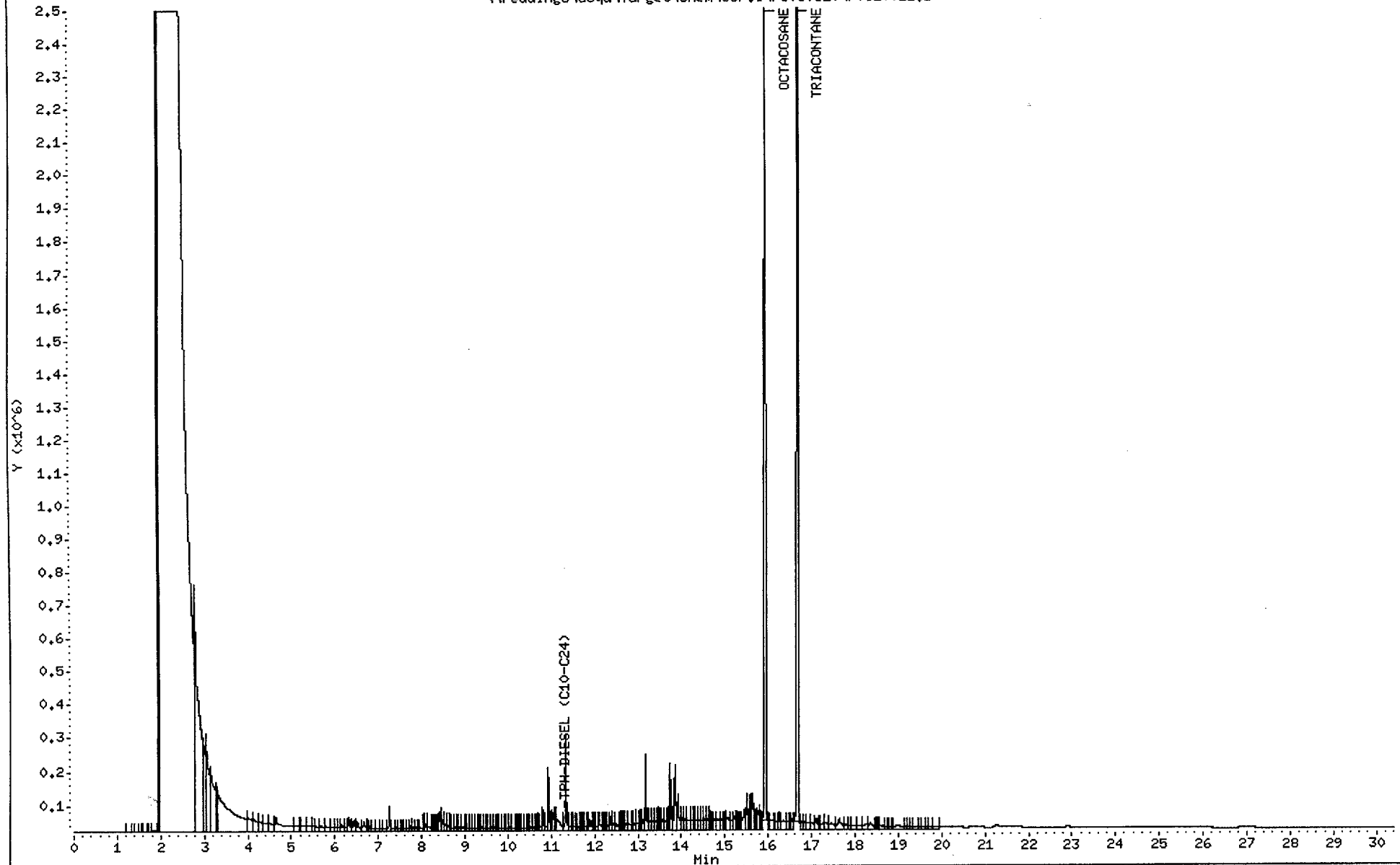
Instrument: GCF.i

Operator:

Column diameter: 0.53

Column phase: RTX-5

\\redding3\acqu\Target\Chem\GCF.i\FG050620\F0620022.D



1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT ID.

P13SCSB0501F

Lab Name: COLUMBIA ANALYTICAL SERVICES - REDDING

Case No.: DF075 SDG No.: DF075

Lab Sample ID: DF075014

Matrix: SOIL Level: LOW

Lab File ID: F0620023

Sample Wt/Vol: 50.6 G

Date Collected: 06/03/05

Extract Vol: 1 ML

Date Extracted: 06/08/05

% Moisture: not dec. 20

Date Analyzed: 06/21/05

Extraction Type: SONICATION

Dilution Factor: 1.0

CAS NO.	COMPOUND	Units: mg/Kg	MDL	RL	RESULT	Q
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PHCC10C24---TPH-DIESEL (C10-C24)		0.79	12	6.0	J
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FORM I SV-1

SW846 SW8015

Date : 21-JUN-2005 07:52

Client ID: P13SCSB0501F

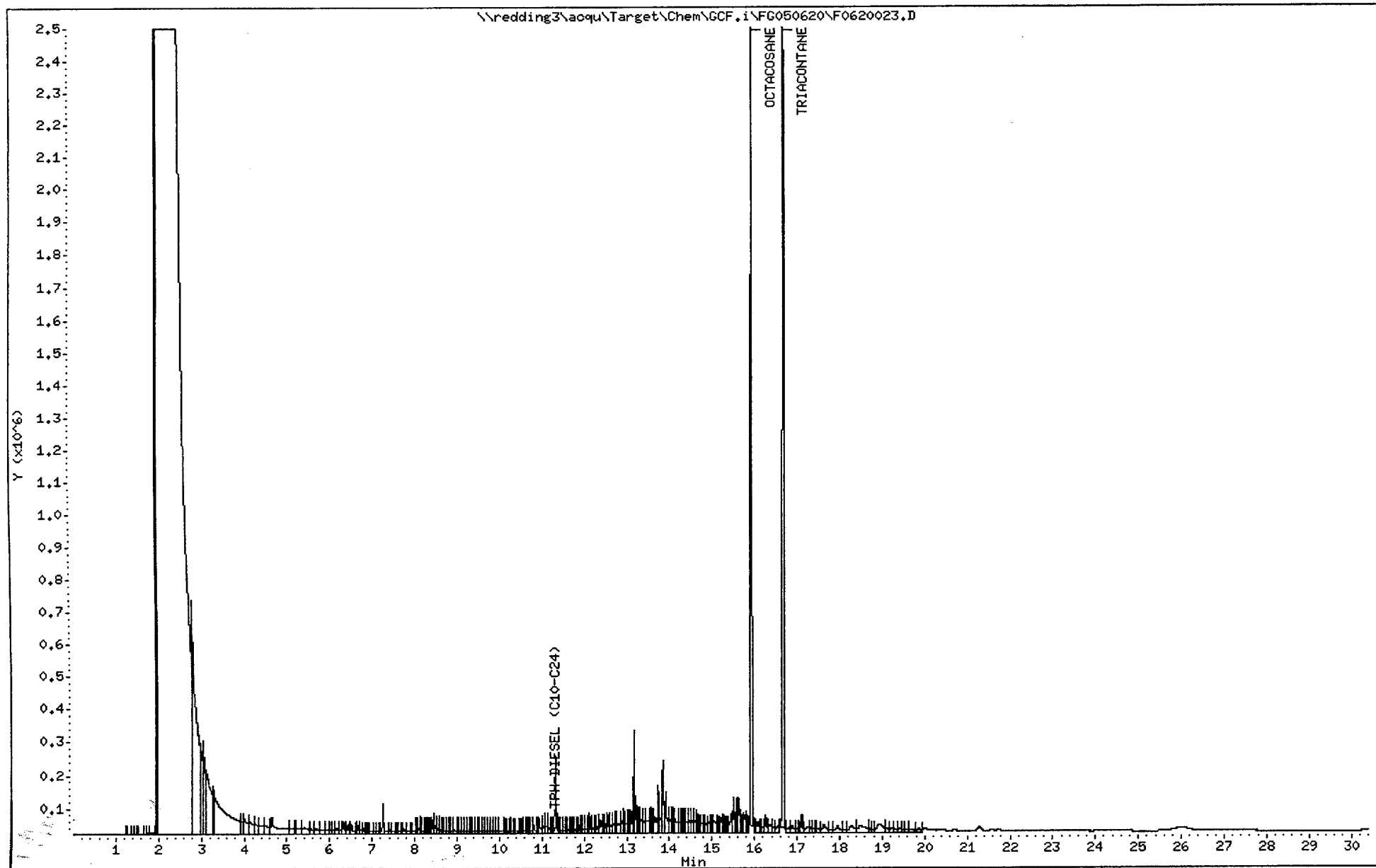
Sample Info: DF075014

Instrument: GCF.i

Operator:

Column diameter: 0.53

Column phase: RTX-5



1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT ID.

P13SCSB0505F

Lab Name: COLUMBIA ANALYTICAL SERVICES - REDDING

Case No.: DF075 SDG No.: DF075

Lab Sample ID: DF075015

Matrix: SOIL Level: LOW

Lab File ID: F0620024

Sample Wt/Vol: 50.9 G

Date Collected: 06/03/05

Extract Vol: 1 ML

Date Extracted: 06/08/05

% Moisture: not dec. 33

Date Analyzed: 06/21/05

Extraction Type: SONICATION

Dilution Factor: 1.0

CAS NO.	COMPOUND	Units: mg/Kg	MDL	RL	RESULT	Q
	PHCC10C24---TPH-DIESEL (C10-C24)		0.94	15	15	U

Data File: \\redding3\acqu\Target\CP

Page 3

Date : 21-JUN-2005 08:32

Client ID: P13SCSB0505F

Sample Info: DF075015

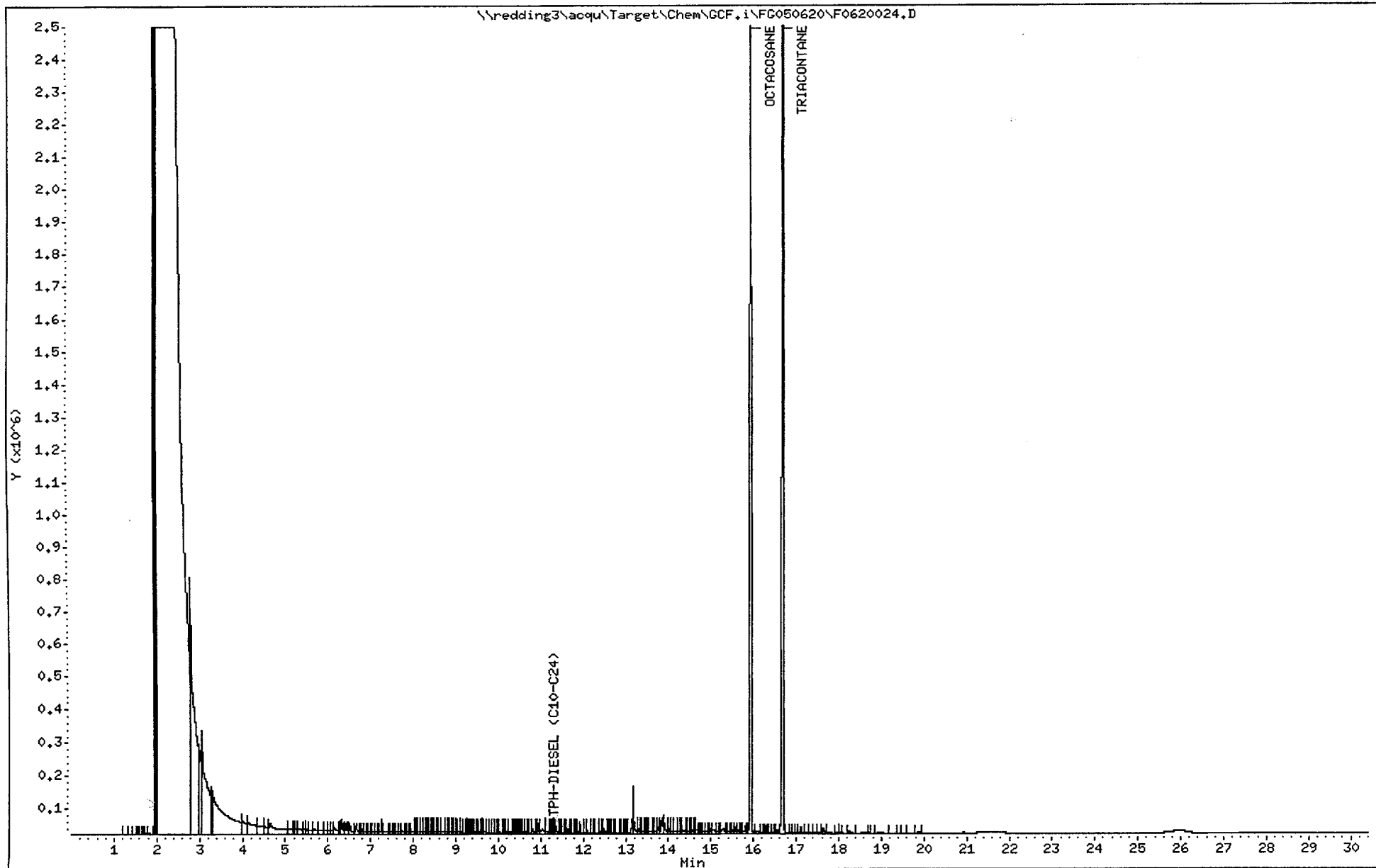
Instrument: GCF.i

Operator:

Column diameter: 0.53

Column phase: RTX-5

\\redding3\acqu\Target\Chem\GCF.i\F06050620\F0620024.D



1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT ID.

P13SCSB0510F

Lab Name: COLUMBIA ANALYTICAL SERVICES - REDDING

Case No.: DF075	SDG No.: DF075	Lab Sample ID: DF075016
Matrix: SOIL	Level: LOW	Lab File ID: F0620025
Sample Wt/Vol: 50.3 G		Date Collected: 06/03/05
Extract Vol: 1 ML		Date Extracted: 06/08/05
% Moisture: not dec. 39		Date Analyzed: 06/21/05
Extraction Type: SONICATION		Dilution Factor: 1.0

CAS NO.	COMPOUND	Units: mg/Kg	MDL	RL	RESULT	Q
	PHCC10C24---TPH-DIESEL (C10-C24)		1.0	16	16	U

Data File: \\redding3\acq\Target\Cl

Page 3

Date : 21-JUN-2005 09:12

Client ID: P13SCSB0510F

Sample Info: DF075016

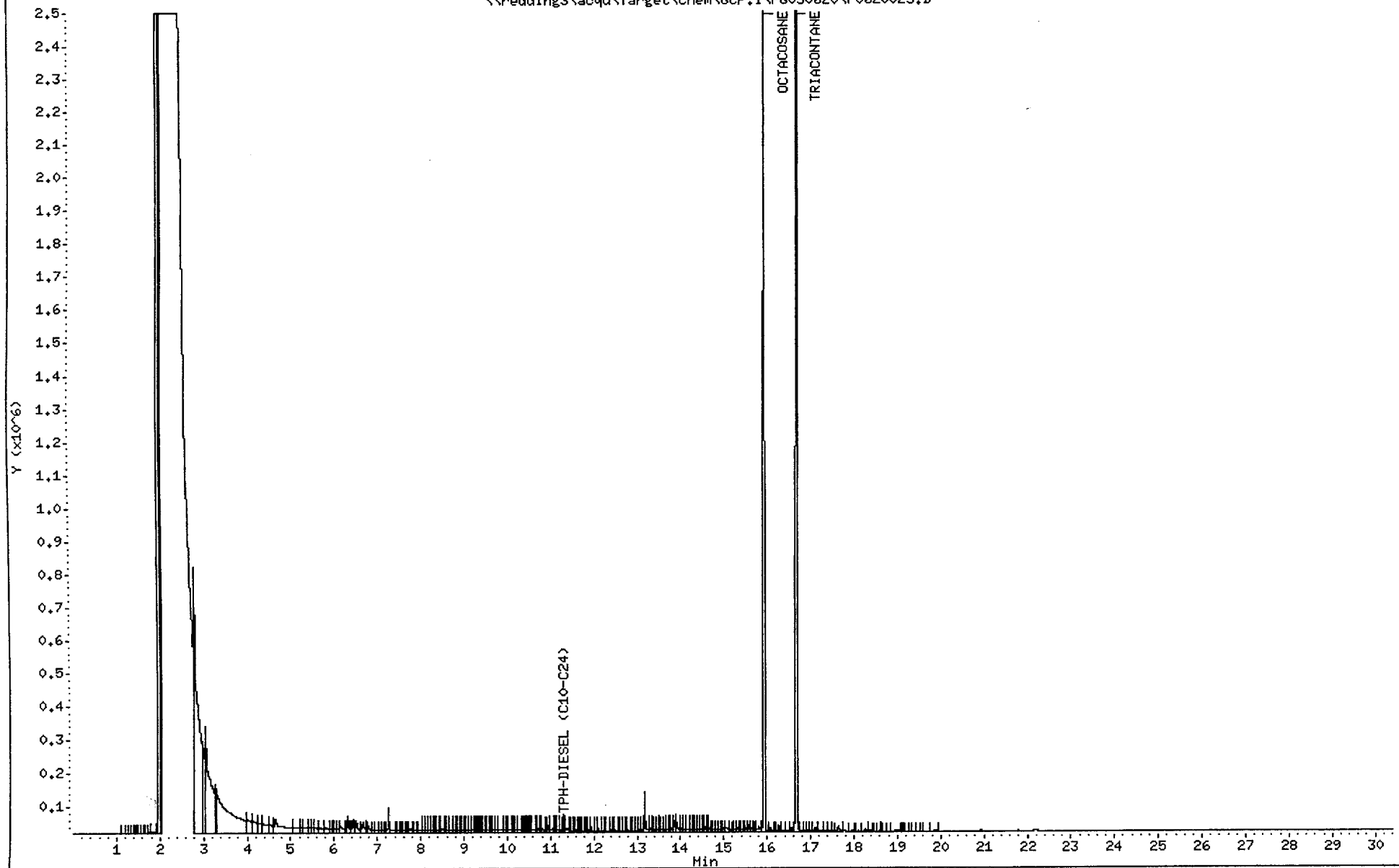
Instrument: GCF.i

Operator:

Column diameter: 0.53

Column phase: RTX-5

\\redding3\acq\Target\Chem\GCF.i\FG050620\F0620025.D



1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT ID.

P13SCSB0100F

Lab Name: COLUMBIA ANALYTICAL SERVICES - REDDING

Case No.: DF075 SDG No.: DF075

Lab Sample ID: DF075017

Matrix: SOIL Level: LOW

Lab File ID: F0620026

Sample Wt/Vol: 49.7 G

Date Collected: 06/03/05

Extract Vol: 1 ML

Date Extracted: 06/08/05

% Moisture: not dec. 18

Date Analyzed: 06/21/05

Extraction Type: SONICATION

Dilution Factor: 1.0

CAS NO.	COMPOUND	Units: mg/Kg	MDL	RL	RESULT	Q
	PHCC10C24---TPH-DIESEL (C10-C24)		0.77	12	12	U

Date : 21-JUN-2005 09:52

Client ID: P13SCSB0100F

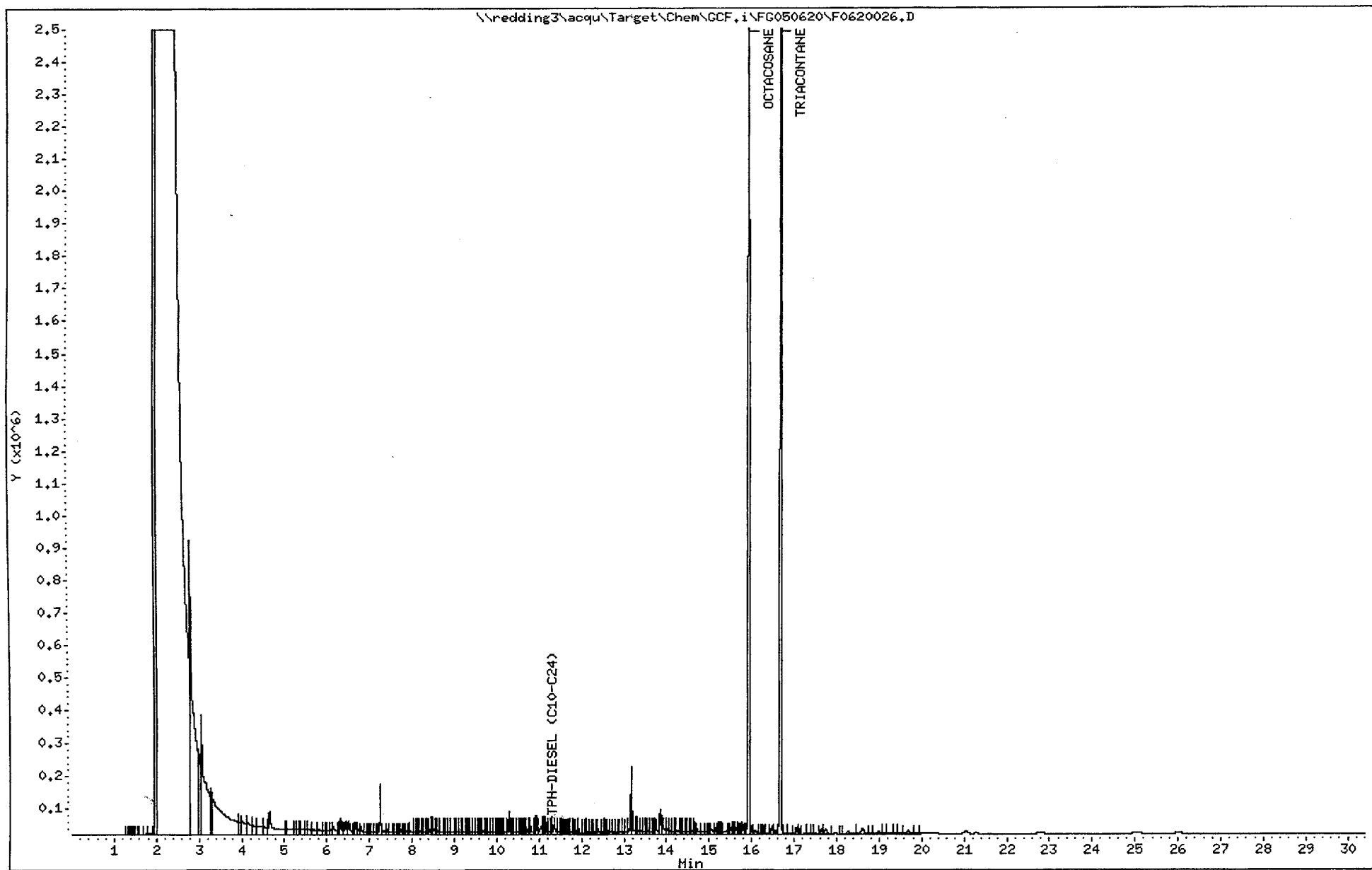
Sample Info: DF075017

Instrument: GCF.i

Operator:

Column diameter: 0.53

Column phase: RTX-5



1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT ID.

P13SCSB0105F

Lab Name: COLUMBIA ANALYTICAL SERVICES - REDDING

Case No.: DF075 SDG No.: DF075

Lab Sample ID: DF075018

Matrix: SOIL Level: LOW

Lab File ID: F0620027

Sample Wt/Vol: 49.8 G

Date Collected: 06/03/05

Extract Vol: 1 ML

Date Extracted: 06/08/05

% Moisture: not dec. 21

Date Analyzed: 06/21/05

Extraction Type: SONICATION

Dilution Factor: 1.0

CAS NO.	COMPOUND	Units: mg/Kg	MDL	RL	RESULT	Q
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PHCC10C24---TPH-DIESEL (C10-C24)						
----------------------------------	--	--	--	--	--	--

0.80

13

31

Data File: \\redding3\acqu\Target\Ch

Page 3

Date : 21-JUN-2005 10:31

Client ID: P13SCSB0105F

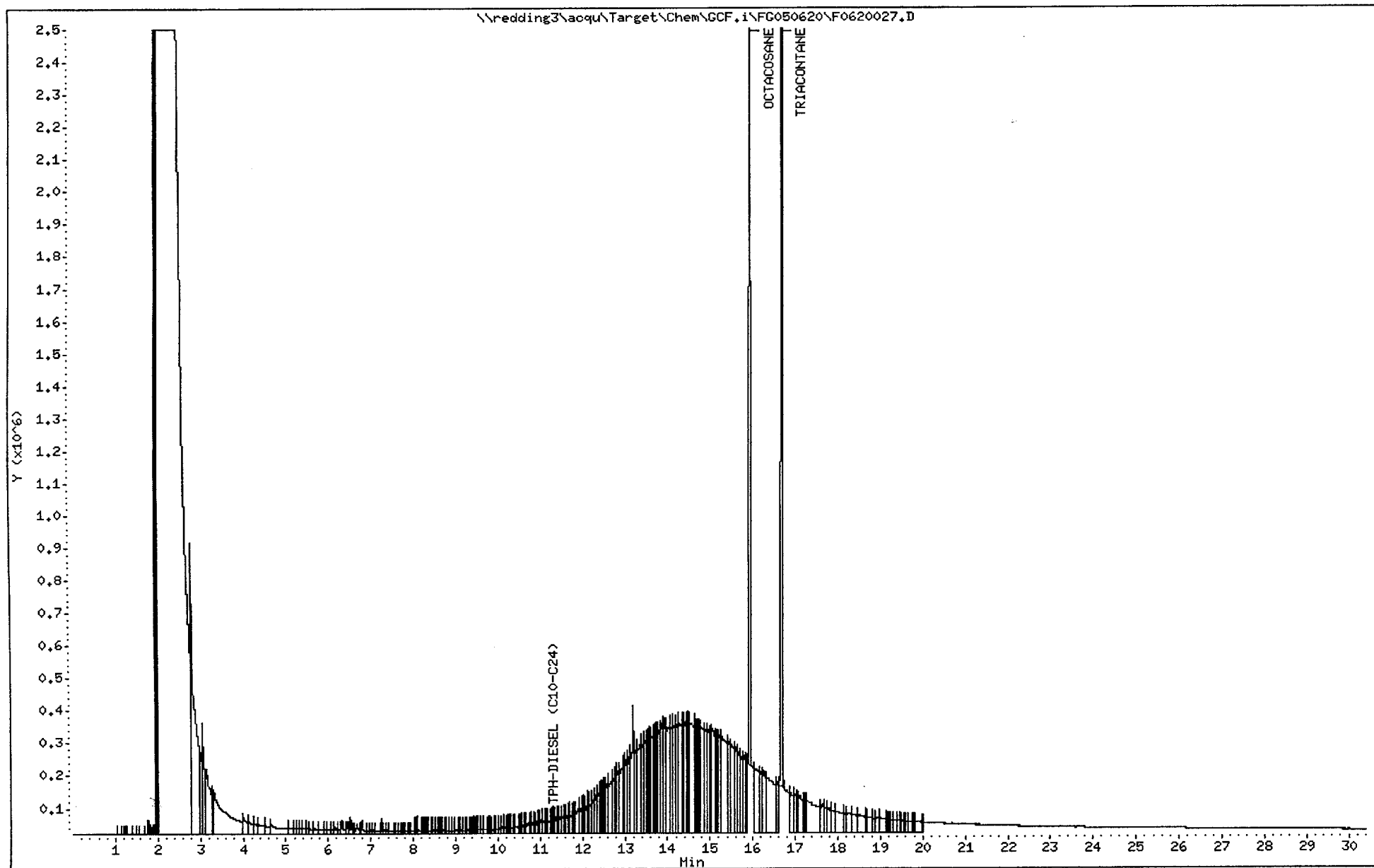
Sample Info: DF075018

Instrument: GCF.i

Operator:

Column diameter: 0.53

Column phase: RTX-5



1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT ID.

P13SCSB0110F

Lab Name: COLUMBIA ANALYTICAL SERVICES - REDDING

Case No.: DF075 SDG No.: DF075

Lab Sample ID: DF075019

Matrix: SOIL Level: LOW

Lab File ID: F0620033

Sample Wt/Vol: 50.0 G

Date Collected: 06/03/05

Extract Vol: 1 ML

Date Extracted: 06/08/05

% Moisture: not dec. 20

Date Analyzed: 06/21/05

Extraction Type: SONICATION

Dilution Factor: 1.0

CAS NO.	COMPOUND	Units: mg/Kg	MDL	RL	RESULT	Q
	PHCC10C24---TPH-DIESEL (C10-C24)		0.79	12	12	U

Data File: \\redding3\acq\Target\Chem\GCF.i\FG050620\F0620033.D

Page 3

Date : 21-JUN-2005 14:51

Client ID: P13SCSB0110F

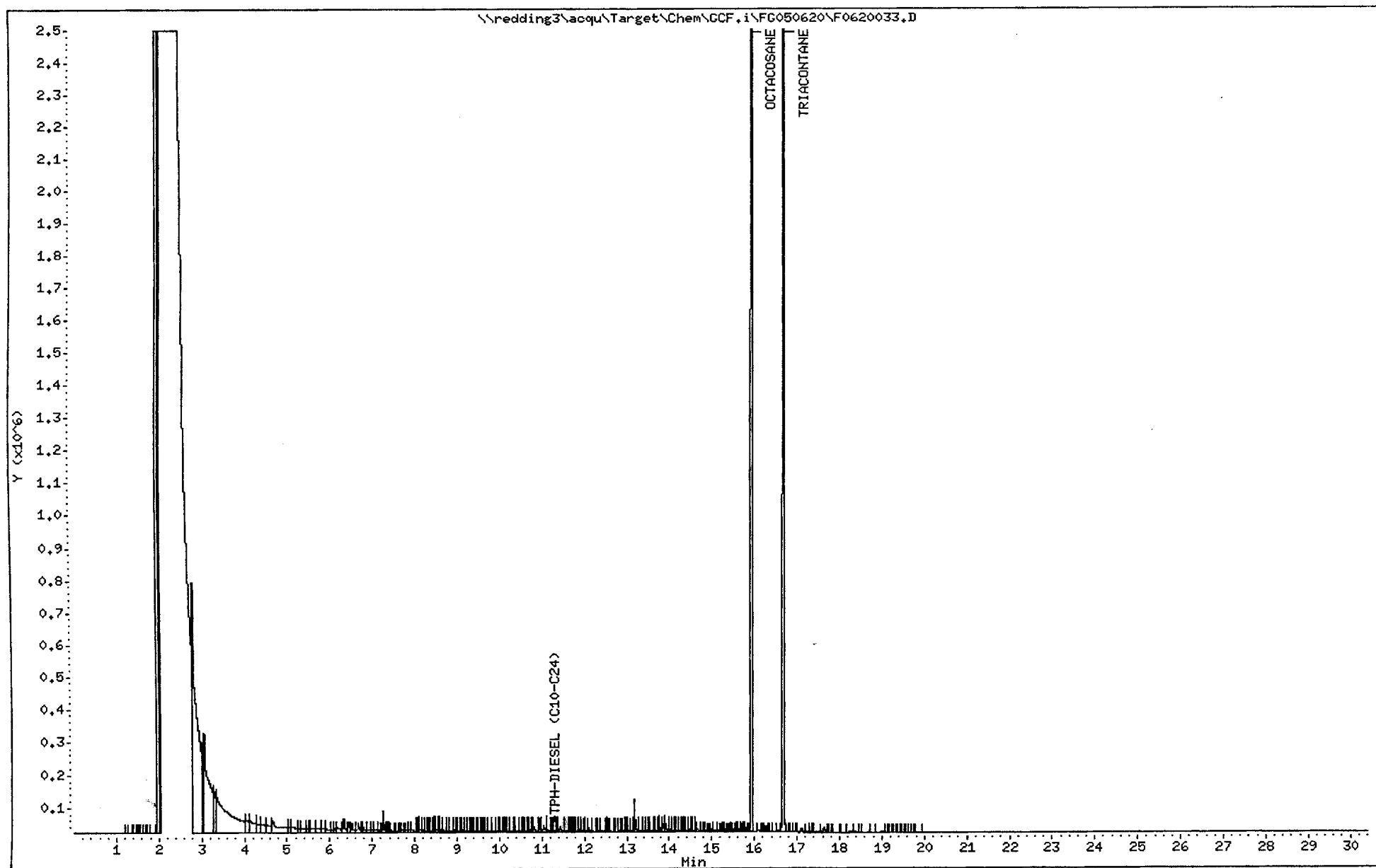
Sample Info: DF075019

Instrument: GCF.i

Operator:

Column diameter: 0.53

Column phase: RTX-5



QC Summary

Data File: \\redding3\acqu\Target\Ch

Page 3

Date : 21-JUN-2005 15:31

Client ID: P13SCSB0110FMS

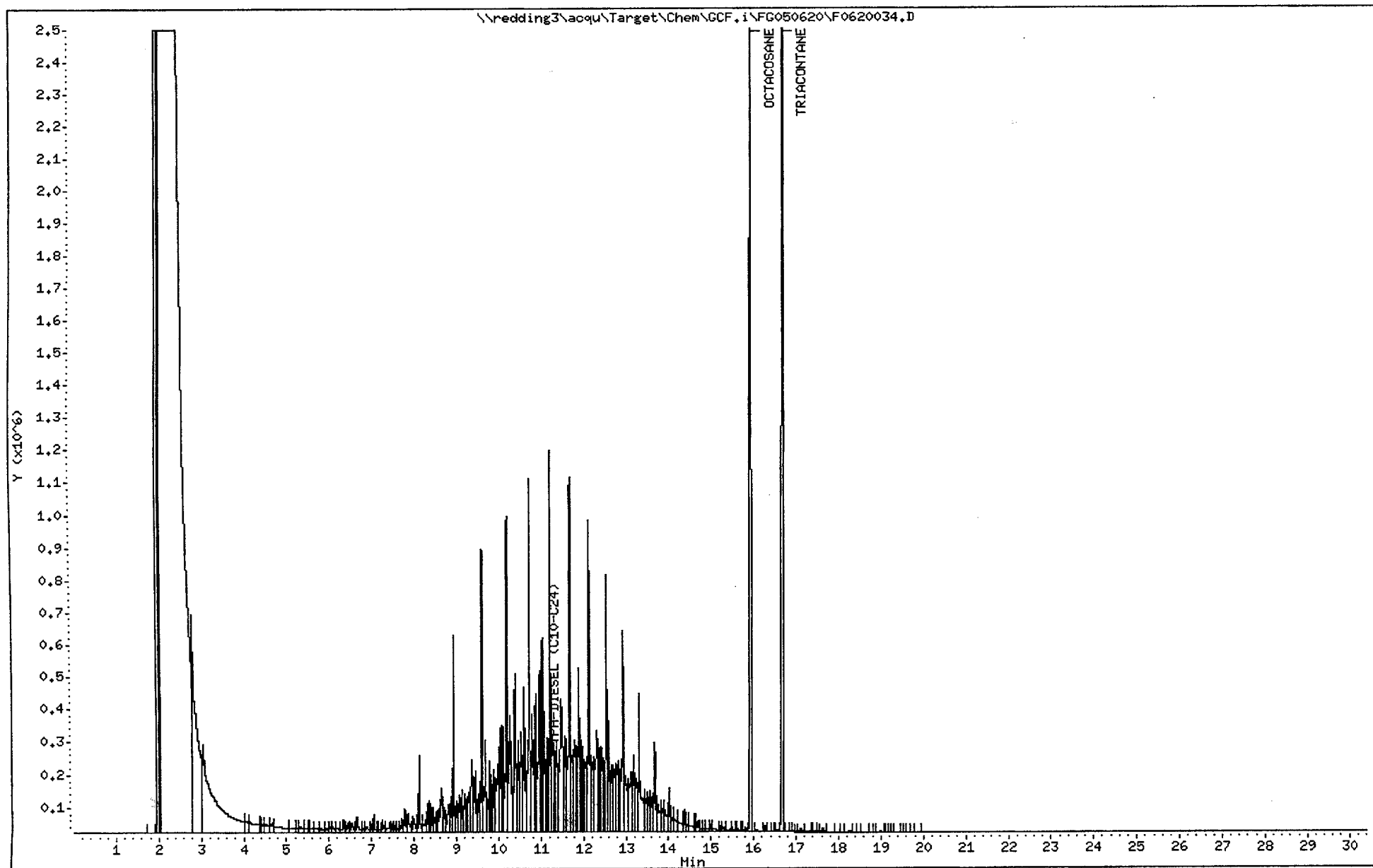
Sample Info: DF075019MS

Instrument: GCF.i

Operator:

Column diameter: 0.53

Column phase: RTX-5



Data File: \\redding3\acqu\Target\Ch

Page 3

Date : 21-JUN-2005 16:10

Client ID: P13SCSB0110FMSD

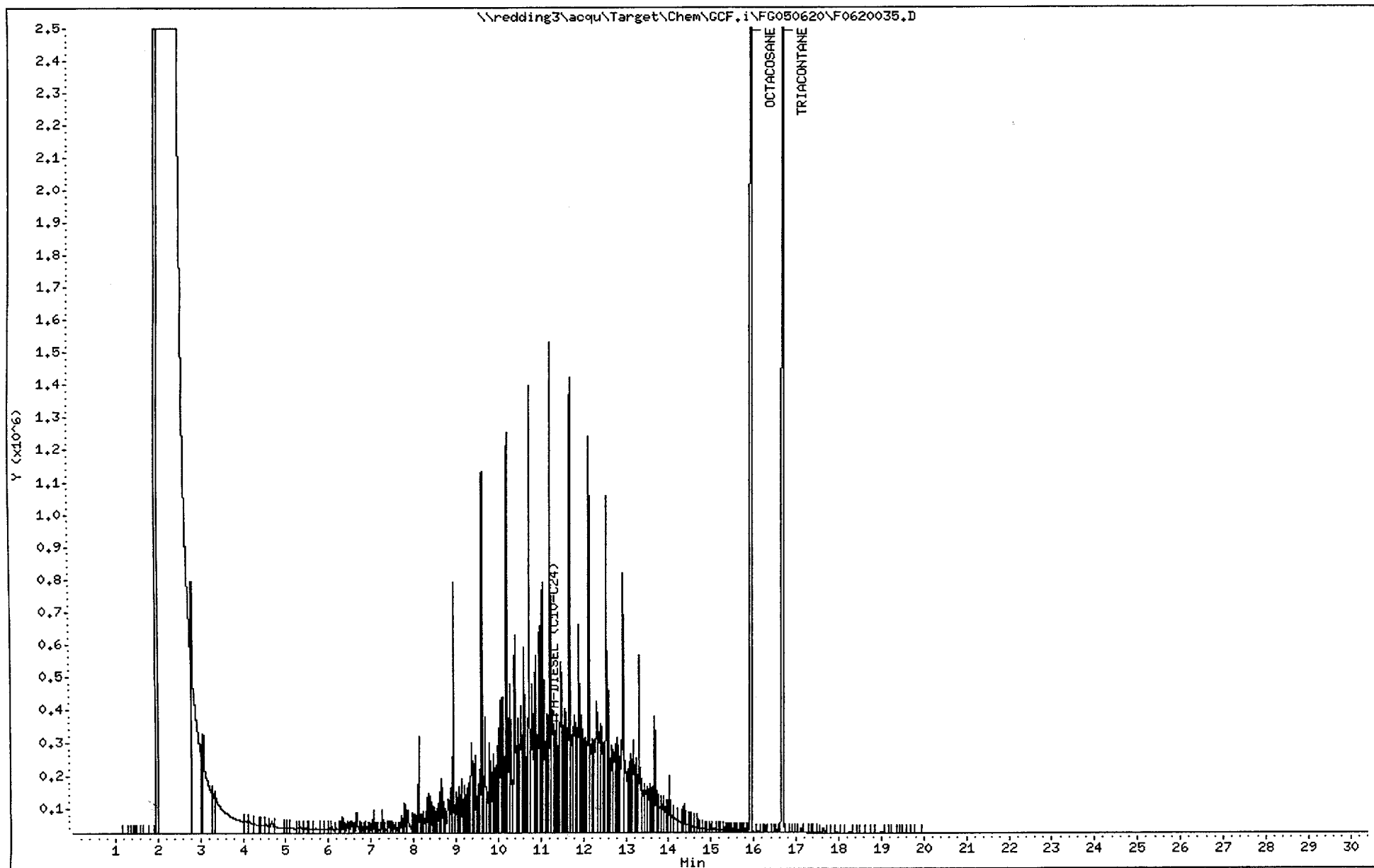
Sample Info: DF075019MSD

Instrument: GCF.i

Operator:

Column diameter: 0.53

Column phase: RTX-5



Data File: \\redding3\acq\Target\CI

Page 3

Date : 20-JUN-2005 20:40

Client ID: DSB10608

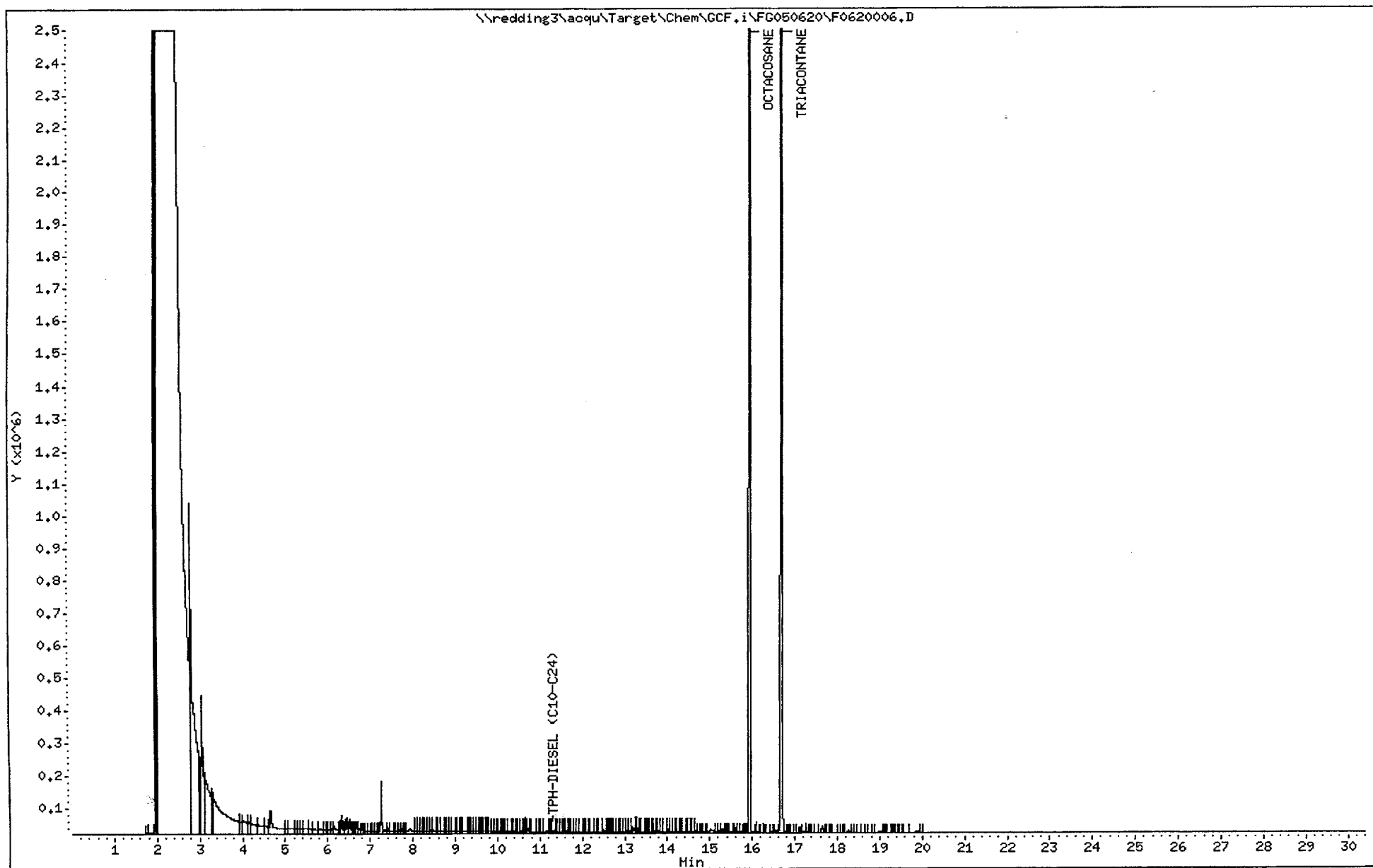
Sample Info: DSB10608

Instrument: GCF.i

Operator:

Column phase: RTX-5

Column diameter: 0.53



Data File: \\redding3\acqu\Target\Chem\GCF.i\FG050620\F0620007.D

Page 3

Date : 20-JUN-2005 21:19

Client ID: DSB10608LCS

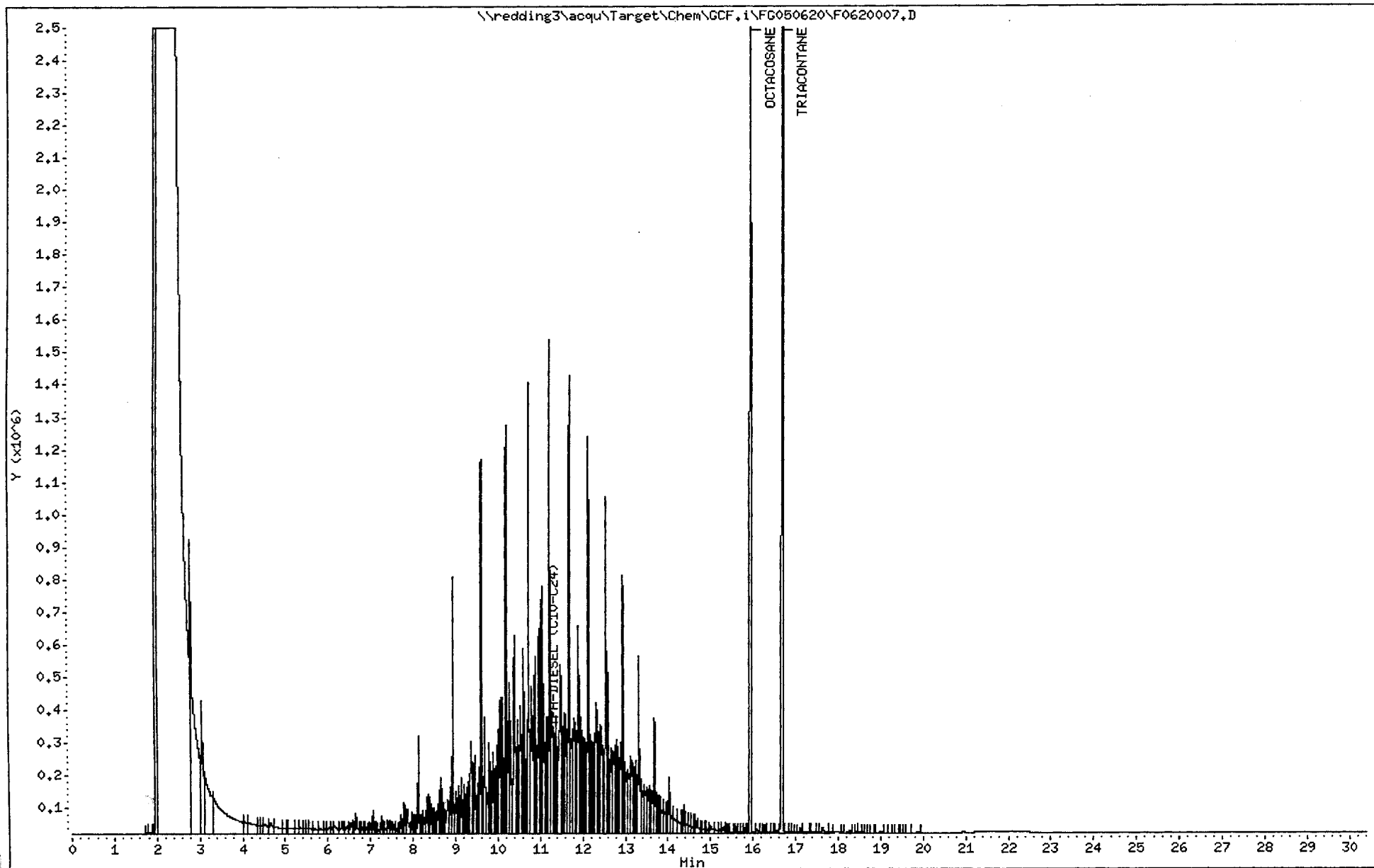
Sample Info: DSB10608LCS

Instrument: GCF.i

Operator:

Column diameter: 0.53

Column phase: RTX-5



Data File: \\redding3\acqu\Target\Ch

Page 3

Date : 20-JUN-2005 21:59

Client ID: DSB10608LCSD

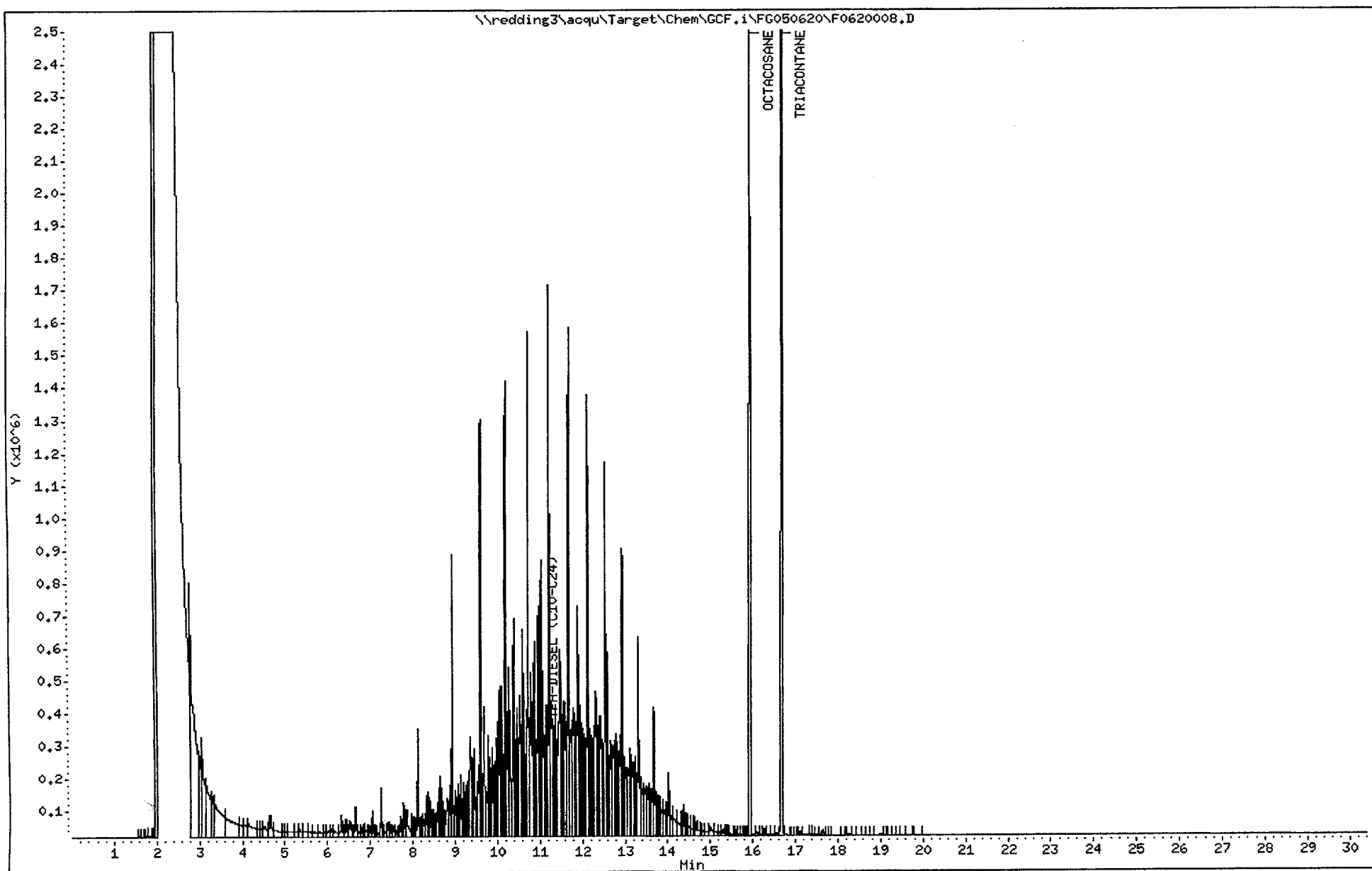
Sample Info: DSB10608LCSD

Instrument: GCF.i

Operator:

Column diameter: 0.53

Column phase: RTX-5



Data File: \\redding3\acqui\Target\Chem

Page 3

Date : 21-JUN-2005 20:50

Client ID: DMB20609LCS

Sample Info: DMB20609LCS

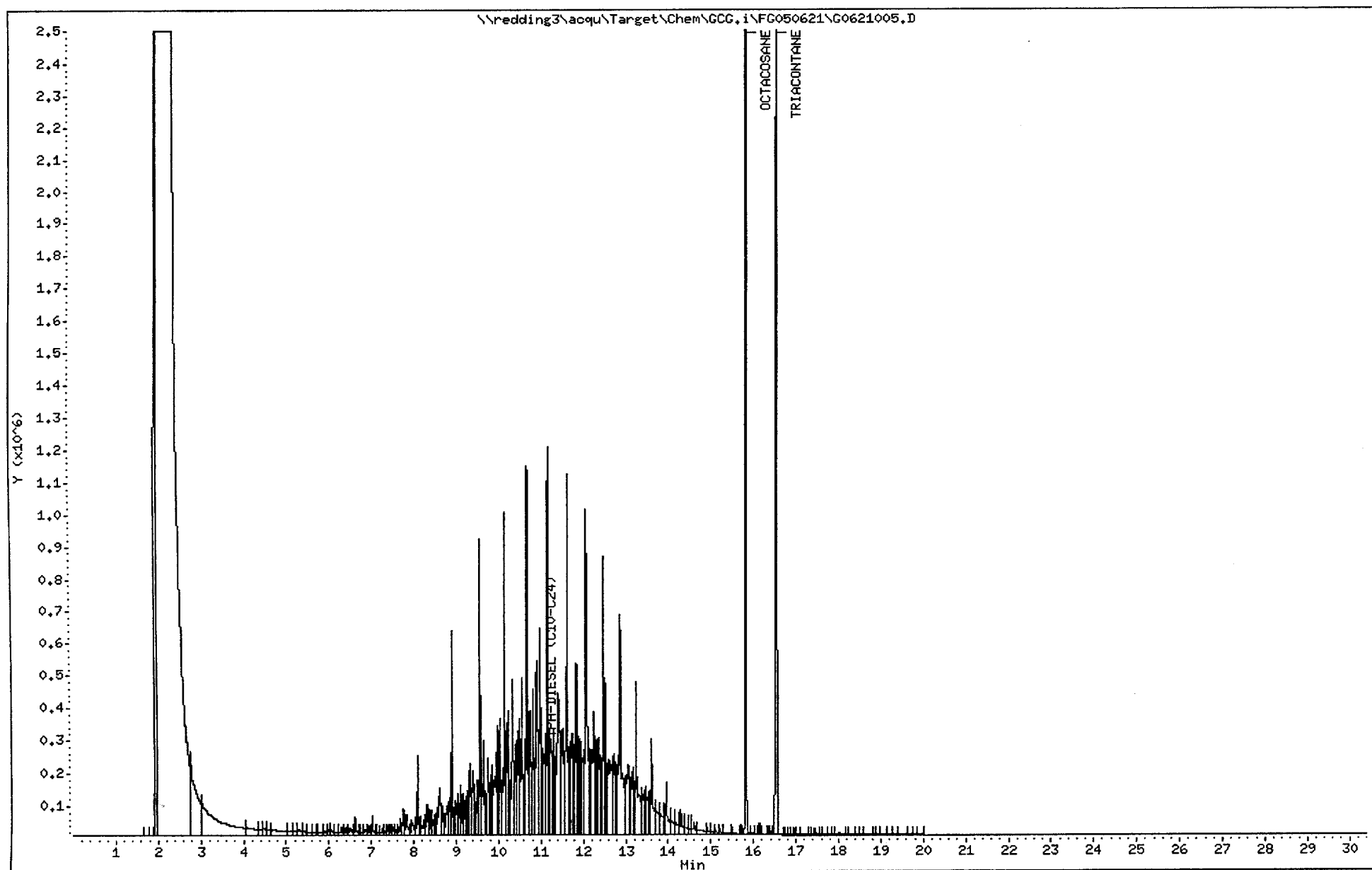
Purge Volume: 1.0

Column phase: RTX-5

Instrument: GCG.i

Operator:

Column diameter: 0.53



Date : 21-JUN-2005 21:30

Client ID: DWB20609LCSD

Sample Info: DWB20609LCSD

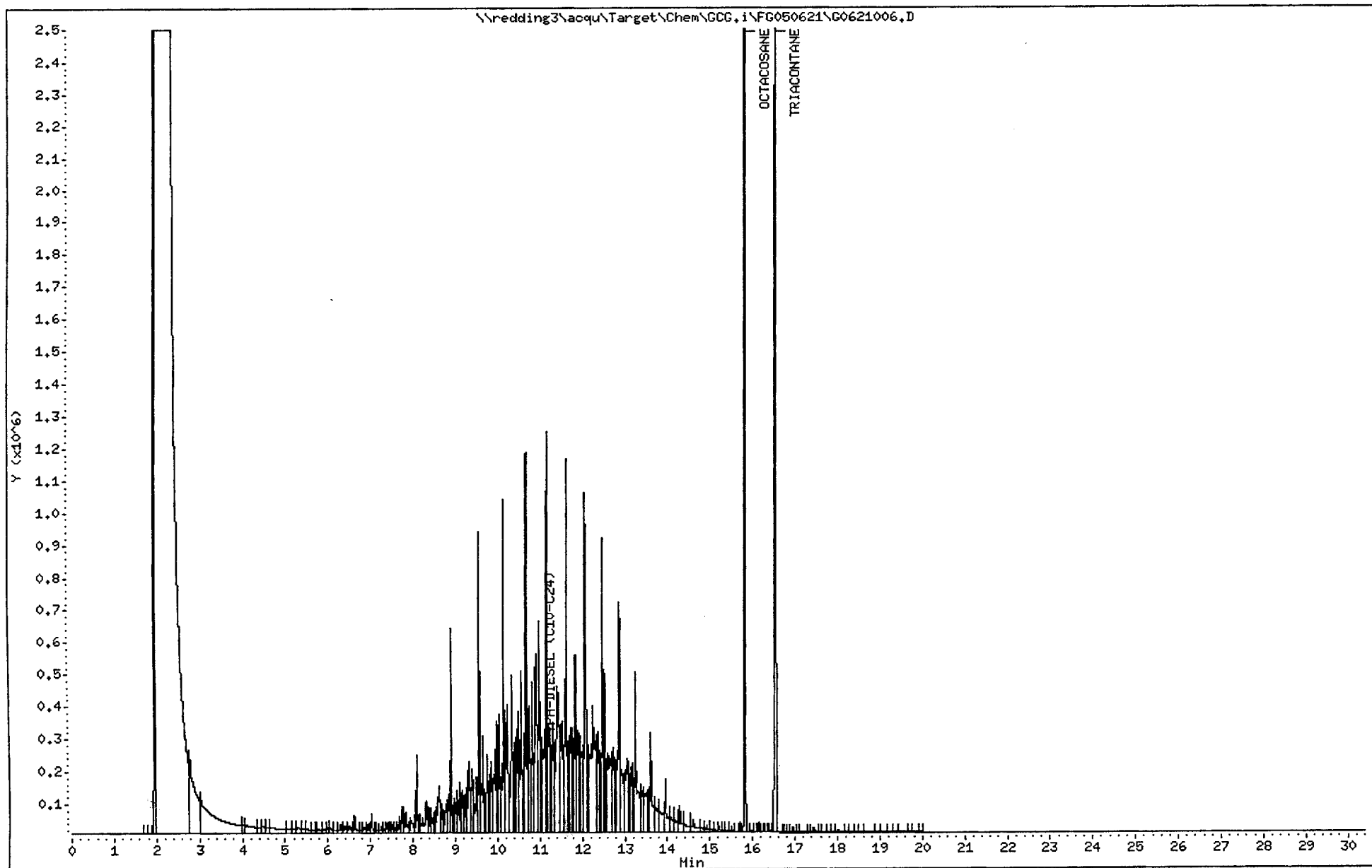
Purge Volume: 1.0

Column phase: RTX-5

Instrument: GCG.i

Operator:

Column diameter: 0.53



1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT ID.

DSB10608

Lab Name: COLUMBIA ANALYTICAL SERVICES - REDDING

Case No.: DF075 SDG No.: DF075

Lab Sample ID: DSB10608

Matrix: SOIL Level: LOW

Lab File ID: F0620006

Sample Wt/Vol: 49.7 G

Date Collected:

Extract Vol: 1 ML

Date Extracted: 06/08/05

Date Analyzed: 06/20/05

Extraction Type: SONICATION

Dilution Factor: 1.0

CAS NO.	COMPOUND	Units: mg/Kg	MDL	RL	RESULT	Q
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PHCC10C24---TPH-DIESEL (C10-C24)	0.63	10	10	U
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1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT ID.

DWB20609

Lab Name: COLUMBIA ANALYTICAL SERVICES - REDDING

Case No.: DF075 SDG No.: DF075

Lab Sample ID: DWB20609

Matrix: WATER Level: LOW

Lab File ID: G0621004

Sample Wt/Vol: 1.000 L

Date Collected:

Extract Vol: 1 ML

Date Extracted: 06/09/05

Date Analyzed: 06/21/05

Extraction Type: SEP FUNNEL

Dilution Factor: 1.0

CAS NO.	COMPOUND	Units: mg/L	MDL	RL	RESULT	Q
---------	----------	-------------	-----	----	--------	---

PHCC10C24---TPH-DIESEL (C10-C24)		0.018	0.10	0.10	U	
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FORM I SV-1

SW846 SW8015

2C
SOIL SEMIVOLATILE SURROGATE RECOVERY

Lab Name: COLUMBIA ANALYTICAL SERVICES - REDDING

Case No.: DF075 SDG No.: DF075

Level: LOW

	LAB ID	CLIENT ID.	S1 (OCT) #	S2 (TRI) #	S3	TOT OUT
	=====	=====	=====	=====	=====	=====
01	DSB10608	DSB10608	105	103		0
02	DSB10608LCS	DSB10608LCS	88	87		0
03	DF075001	P13SCSB0201F	95	94		0
04	DF075002	P13SCSB0205F	98	97		0
05	DF075003	P13SCSB0210F	81	80		0
06	DF075004	P13SCSB0301F	93	92		0
07	DF075005	P13SCSB0305F	89	88		0
08	DF075006	P13SCSB0310F	99	99		0
09	DF075007	P13SCSB0400F	78	79		0
10	DF075008	P13SCSB0405F	83	80		0
11	DF075009	P13SCSB0410F	86	82		0
12	DF075011	P13SCSB0601F	92	92		0
13	DF075012	P13SCSB0605F	89	89		0
14	DF075013	P13SCSB0610F	91	91		0
15	DF075014	P13SCSB0501F	78	79		0
16	DF075015	P13SCSB0505F	95	95		0
17	DF075016	P13SCSB0510F	89	89		0
18	DF075017	P13SCSB0100F	104	103		0
19	DF075018	P13SCSB0105F	87	87		0
20	DF075019	P13SCSB0110F	108	110*		1
21	DF075019MS	P13SCSB0110FMS	94	94		0
22	DF075019MSD	P13SCSB0110FMSD	129*	130*		2
23						
24						
25						
26						
27						
28						
29						
30						

QC LIMITS

S1 (OCT) = OCTACOSANE (56-110)

S2 (TRI) = TRIACONTANE (52-107)

Column to be used to flag recovery values

* Values outside of contract required QC limits

D Surrogates diluted out

2C
WATER SEMIVOLATILE SURROGATE RECOVERY

Lab Name: COLUMBIA ANALYTICAL SERVICES - REDDING

Case No.: DF075 SDG No.: DF075

	LAB ID	CLIENT ID.	S1 (OCT) #	S2 (TRI) #	S3	TOT OUT
	=====	=====	=====	=====	=====	=====
01	DWB20609	DWB20609	64	68		0
02	DWB20609LCS	DWB20609LCS	79	77		0
03	DWB20609LCSD	DWB20609LCSD	80	79		0
04	DF075010	P13SCSB0400R	66	68		0
05						
06						
07						
08						
09						
10						
11						
12						
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23						
24						
25						
26						
27						
28						
29						
30						

QC LIMITS

S1 (OCT) = OCTACOSANE (58-111)

S2 (TRI) = TRIACONTANE (54-109)

Column to be used to flag recovery values

* Values outside of contract required QC limits

D Surrogates diluted out

3C
SOIL SEMIVOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: COLUMBIA ANALYTICAL SERVICES - REDDING

Case No.: DF075 SDG No.: DF075

Matrix Spike - Sample No.: P13SCSB0110F Level: LOW

COMPOUND	SPIKE ADDED (mg/Kg)	SAMPLE CONCENTRATION (mg/Kg)	MS CONCENTRATION (mg/Kg)	MS % REC #	QC. LIMITS REC.
TPH-DIESEL (C10-C24)	62.588	0.00000	45.443	73	65-135

COMPOUND	SPIKE ADDED (mg/Kg)	MSD CONCENTRATION (mg/Kg)	MSD % REC #	% RPD #	QC LIMITS RPD	REC.
TPH-DIESEL (C10-C24)	63.004	58.664	93	25	30	65-135

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

RPD: 0 out of 1 outside limits
Spike Recovery: 0 out of 2 outside limits

3D
SOIL SEMIVOLATILE LAB CONTROL SAMPLE

Lab Name: COLUMBIA ANALYTICAL SERVICES - REDDING

Case No.: DF075 SDG No.: DF075

LCS - Sample No.: DSB10608 Level: LOW

COMPOUND	SPIKE ADDED (mg/Kg)	SAMPLE CONCENTRATION (mg/Kg)	LCS CONCENTRATION (mg/Kg)	LCS % REC #	QC. LIMITS REC.
=====	=====	=====	=====	=====	=====
TPH-DIESEL (C10-C24)	50.181	N/A	45.719	91	65-135

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

RPD: 0 out of 0 outside limits
Spike Recovery: 0 out of 1 outside limits

3C
WATER SEMIVOLATILE LAB CONTROL SAMPLE

Lab Name: COLUMBIA ANALYTICAL SERVICES - REDDING

Case No.: DF075 SDG No.: DF075

LCS - Sample No.: DWB20609

COMPOUND	SPIKE ADDED (mg/L)	SAMPLE CONCENTRATION (mg/L)	LCS CONCENTRATION (mg/L)	LCS % REC #	QC. LIMITS REC.
TPH-DIESEL (C10-C24)	2.5000	N/A	1.9675	79	65-135

COMPOUND	SPIKE ADDED (mg/L)	LCSD CONCENTRATION (mg/L)	LCSD % REC #	% RPD #	QC LIMITS RPD	REC.
TPH-DIESEL (C10-C24)	2.5000	2.0394	82	4	20	65-135

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

RPD: 0 out of 1 outside limits
Spike Recovery: 0 out of 2 outside limits

4B
SEMIVOLATILE METHOD BLANK SUMMARY

Client ID.

DSB10608

Lab Name: COLUMBIA ANALYTICAL SERVICES - REDDING

Case No.: DF075 SDG No.: DF075

Lab File ID: F0620006 Lab Sample ID: DSB10608

Date Extracted: 06/08/05 Extraction Type: SONICATION

Date Analyzed: 06/20/05 Time Analyzed: 2040

Matrix: SOIL Level: (low/med) LOW

Instrument ID: GCF

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

	CLIENT ID.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
	=====	=====	=====	=====
01	DSB10608LCS	DSB10608LCS	F0620007	06/20/05
02	P13SCSB0201F	DF075001	F0620009	06/20/05
03	P13SCSB0205F	DF075002	F0620010	06/20/05
04	P13SCSB0210F	DF075003	F0620011	06/20/05
05	P13SCSB0301F	DF075004	F0620012	06/21/05
06	P13SCSB0305F	DF075005	F0620013	06/21/05
07	P13SCSB0310F	DF075006	F0620014	06/21/05
08	P13SCSB0400F	DF075007	F0620015	06/21/05
09	P13SCSB0405F	DF075008	F0620017	06/21/05
10	P13SCSB0410F	DF075009	F0620018	06/21/05
11	P13SCSB0601F	DF075011	F0620019	06/21/05
12	P13SCSB0605F	DF075012	F0620021	06/21/05
13	P13SCSB0610F	DF075013	F0620022	06/21/05
14	P13SCSB0501F	DF075014	F0620023	06/21/05
15	P13SCSB0505F	DF075015	F0620024	06/21/05
16	P13SCSB0510F	DF075016	F0620025	06/21/05
17	P13SCSB0100F	DF075017	F0620026	06/21/05
18	P13SCSB0105F	DF075018	F0620027	06/21/05
19	P13SCSB0110F	DF075019	F0620033	06/21/05
20	P13SCSB0110FMS	DF075019MS	F0620034	06/21/05
21	P13SCSB0110FMDS	DF075019MSD	F0620035	06/21/05
22				
23				

4B
SEMIVOLATILE METHOD BLANK SUMMARY

Client ID.

DWB20609

Lab Name: COLUMBIA ANALYTICAL SERVICES - REDDING

Case No.: DF075 SDG No.: DF075

Lab File ID: G0621004 Lab Sample ID: DWB20609

Date Extracted: 06/09/05 Extraction Type: SEP FUNNEL

Date Analyzed: 06/21/05 Time Analyzed: 2010

Matrix: WATER Level: (low/med) LOW

Instrument ID: GCG

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

	CLIENT ID.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
	=====	=====	=====	=====
01	DWB20609LCS	DWB20609LCS	G0621005	06/21/05
02	DWB20609LCSD	DWB20609LCSD	G0621006	06/21/05
03	P13SCSB0400R	DF075010	G0621007	06/21/05
04				
05				
06				
07				
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20				
21				
22				
23				

Standards Data

6C
SEMIVOLATILE ORGANICS INITIAL CALIBRATION DATA
ANALYTE CONCENTRATIONS

Lab Name: COLUMBIA ANALYTICAL SERVICES - REDDING

Case No.: DF075 SDG No.: DF075

Instrument ID: GCF ICAL Date(s): 06/15/05 06/16/05

Analyte Concentration:

LAB FILE ID:		RRF0.1=F0615007.D	RRF0.5=F0615008.D		
RRF1 =F0615009.D		RRF2.5=F0615010.D	RRF4 =F0615011.D		
COMPOUND	RRF0.1	RRF0.5	RRF1	RRF2.5	RRF4
TPH-DIESEL (C10-C24)	0.100	0.500	1.000	2.500	4.000
OCTACOSANE	0.100	0.150	0.250	0.300	0.350
TRIACONTANE	0.100	0.150	0.250	0.300	0.350

6C
SEMIVOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: COLUMBIA ANALYTICAL SERVICES - REDDING

Case No.: DF075 SDG No.: DF075

Instrument ID: GCF

ICAL Date(s): 06/15/05

06/16/05

LAB FILE ID:		RRF0.1=F0615007.D		RRF0.5=F0615008.D			
RRF1 =F0615009.D		RRF2.5=F0615010.D		RRF4 =F0615011.D			
COMPOUND	RRF0.1	RRF0.5	RRF1	RRF2.5	RRF4	$\overline{\text{RRF}}$	%RSD
TPH-DIESEL (C10-C24)	8302	6481	7116	6537	6504	6988	11.2
OCTACOSANE	6286	6279	7324	7120	7187	6839	7.5
TRIACONTANE	6191	6142	7176	7000	7223	6746	7.9

RF's divided by 100000

6C
SEMIVOLATILE ORGANICS INITIAL CALIBRATION DATA
ANALYTE CONCENTRATIONS

Lab Name: COLUMBIA ANALYTICAL SERVICES - REDDING

Case No.: DF075 SDG No.: DF075

Instrument ID: GCG ICAL Date(s): 06/17/05

Analyte Concentration:

LAB FILE ID:		RRF0.1=G0617005.D	RRF0.5=G0617006.D		
RRF1 =G0617007.D		RRF2.5=G0617008.D	RRF4 =G0617012.D		
COMPOUND	RRF0.1	RRF0.5	RRF1	RRF2.5	RRF4
=====	=====	=====	=====	=====	=====
TPH-DIESEL (C10-C24)	0.100	0.500	1.000	2.500	4.000
=====	=====	=====	=====	=====	=====
OCTACOSANE	0.100	0.150	0.250	0.300	0.350
TRIACONTANE	0.100	0.150	0.250	0.300	0.350

6C
SEMIVOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: COLUMBIA ANALYTICAL SERVICES - REDDING

Case No.: DF075 SDG No.: DF075

Instrument ID: GCG

ICAL Date(s): 06/17/05

LAB FILE ID:		RRF0.1=G0617005.D		RRF0.5=G0617006.D				
RRF1 =G0617007.D		RRF2.5=G0617008.D		RRF4 =G0617012.D				
COMPOUND		RRF0.1	RRF0.5	RRF1	RRF2.5	RRF4	$\overline{\text{RRF}}$	%RSD
=====		=====	=====	=====	=====	=====	=====	=====
TPH-DIESEL (C10-C24)		7268	6453	7159	7052	6855	6957	4.6
=====		=====	=====	=====	=====	=====	=====	=====
OCTACOSANE		5767	5764	6790	7129	7712	6632	12.9
TRIACONTANE		5618	5949	6827	6644	7182	6444	10.0

RF's divided by 100000

7B
SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: COLUMBIA ANALYTICAL SERVICES - REDDING

Instrument ID: GCF Case No.: DF075 SDG No.: DF075

Lab File ID: F0615014 CCV Date/Time: 06/16/05 0318

ICAL Date/Time (1st pt): 06/15/05 2240

ICAL Date/Time (Last pt): 06/16/05 0119

COMPOUND	$\overline{\text{RRF}}$	RRF1	CURVE TYPE	%D	MAX %D
TPH-DIESEL (C10-C24)	6988	7016	AVG	0.4	15.0
OCTACOSANE	6839	7627	AVG	11.5	15.0
TRIACONTANE	6746	7261	AVG	7.6	15.0

RF's divided by 100000

7B
SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: COLUMBIA ANALYTICAL SERVICES - REDDING

Instrument ID: GCF Case No.: DF075 SDG No.: DF075

Lab File ID: F0620003 CCV Date/Time: 06/20/05 1840

ICAL Date/Time (1st pt): 06/15/05 2240

ICAL Date/Time (Last pt): 06/16/05 0119

COMPOUND	\overline{RRF}	RRF1	CURVE TYPE	%D	MAX %D
TPH-DIESEL (C10-C24)	6988	6891	AVG	-1.4	15.0
OCTACOSANE	6839	7158	AVG	4.7	15.0
TRIACONTANE	6746	7148	AVG	6.0	15.0

RF's divided by 100000

Instrument ID: GCF	Case No.: DF075	SDG No.: DF075
Lab File ID: F0620016	CCV Date/Time:	06/21/05 0315
	ICAL Date/Time (1st pt):	06/15/05 2240
	ICAL Date/Time (Last pt):	06/16/05 0119

COMPOUND	$\overline{\text{RRF}}$	RRF1	CURVE TYPE	%D	MAX %D
TPH-DIESEL (C10-C24)	6988	7129	AVG	2.0	15.0
OCTACOSANE	6839	7385	AVG	8.0	15.0
TRIACONTANE	6746	7037	AVG	4.3	15.0

FORM VII SV-1

7B
SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: COLUMBIA ANALYTICAL SERVICES - REDDING

Instrument ID: GCF Case No.: DF075 SDG No.: DF075

Lab File ID: F0620029 CCV Date/Time: 06/21/05 1151

ICAL Date/Time (1st pt): 06/15/05 2240

ICAL Date/Time (Last pt): 06/16/05 0119

COMPOUND	\overline{RRF}	RRF2.5	CURVE TYPE	%D	MAX %D
=====	=====	=====	=====	=====	=====
TPH-DIESEL (C10-C24) _____	6988	6713	AVG	-3.9	15.0
=====	=====	=====	=====	=====	=====
OCTACOSANE _____	6839	7299	AVG	6.7	15.0
TRIACONTANE _____	6746	7186	AVG	6.5	15.0

RF's divided by 100000

Instrument ID: GCF

Case No.: DF075

SDG No. : DF075

Lab File ID: F0620037

CCV Date/Time:

06/21/05 1730

ICAL Date/Time (1st pt): 06/15/05 2240

ICAL Date/Time (Last pt): 06/16/05 0119

COMPOUND	$\overline{\text{RRF}}$	RRF1	CURVE TYPE	%D	MAX %D
TPH-DIESEL (C10-C24)	6988	7032	AVG	0.6	15.0
OCTACOSANE	6839	6533	AVG	-4.5	15.0
TRIACONTANE	6746	6212	AVG	-7.9	15.0

RF's divided by 100000

7B
SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: COLUMBIA ANALYTICAL SERVICES - REDDING

Instrument ID: GCG	Case No.: DF075	SDG No.: DF075
Lab File ID: G0617015	CCV Date/Time:	06/17/05 2026
	ICAL Date/Time (1st pt):	06/17/05 1350
	ICAL Date/Time (Last pt):	06/17/05 1827

COMPOUND	\overline{RRF}	RRF1	CURVE TYPE	%D	MAX %D
TPH-DIESEL (C10-C24)	6957	6747	AVG	-3.0	15.0
OCTACOSANE	6632	6793	AVG	2.4	15.0
TRIACONTANE	6444	6938	AVG	7.7	15.0

RF's divided by 100000

ICAL Date/Time (Last pt): 06/17/05 1827

7B
SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: COLUMBIA ANALYTICAL SERVICES - REDDING

Instrument ID: GCG Case No.: DF075 SDG No.: DF075

Lab File ID: G0621014 CCV Date/Time: 06/22/05 0247

ICAL Date/Time (1st pt): 06/17/05 1350

ICAL Date/Time (Last pt): 06/17/05 1827

COMPOUND	$\overline{\text{RRF}}$	RRF1	CURVE TYPE	%D	MAX %D
TPH-DIESEL (C10-C24)	6957	6996	AVG	0.6	15.0
OCTACOSANE	6632	5599	AVG	-15.6	15.0
TRIACONTANE	6444	5728	AVG	-11.1	15.0

<-

RF's divided by 100000

8D
SEMIVOLATILE ANALYTICAL SEQUENCE

Lab Name: COLUMBIA ANALYTICAL SERVICES - REDDING

Case No.: DF075 SDG No.: DF075

GC Column: RTX-5 ID: 0.53 (mm) ICAL Date(s): 06/15/05 06/16/05

Instrument ID: GCF

	CLIENT SAMPLE ID	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED
	=====	=====	=====	=====
01	DSTD1	DSTD1	06/15/05	2240
02	DSTD2	DSTD2	06/15/05	2320
03	DSTD3	DSTD3	06/16/05	0000
04	DSTD4	DSTD4	06/16/05	0039
05	DSTD5	DSTD5	06/16/05	0119
06	QCALTSTD	QCALTSTD	06/16/05	0318
07	DSTD3	DSTD 1.0 MG/	06/20/05	1840
08	DSB10608	DSB10608	06/20/05	2040
09	DSB10608LCS	DSB10608LCS	06/20/05	2119
10	P13SCSB0201F	DF075001	06/20/05	2238
11	P13SCSB0205F	DF075002	06/20/05	2318
12	P13SCSB0210F	DF075003	06/20/05	2357
13	P13SCSB0301F	DF075004	06/21/05	0037
14	P13SCSB0305F	DF075005	06/21/05	0116
15	P13SCSB0310F	DF075006	06/21/05	0156
16	P13SCSB0400F	DF075007	06/21/05	0236
17	DSTD3	DSTD 1.0 MG/	06/21/05	0315
18	P13SCSB0405F	DF075008	06/21/05	0355
19	P13SCSB0410F	DF075009	06/21/05	0434
20	P13SCSB0601F	DF075011	06/21/05	0514
21	P13SCSB0605F	DF075012	06/21/05	0633
22	P13SCSB0610F	DF075013	06/21/05	0713
23	P13SCSB0501F	DF075014	06/21/05	0752
24	P13SCSB0505F	DF075015	06/21/05	0832
25	P13SCSB0510F	DF075016	06/21/05	0912
26	P13SCSB0100F	DF075017	06/21/05	0952
27	P13SCSB0105F	DF075018	06/21/05	1031
28	DSTD4	DSTD 2.5 MG/	06/21/05	1151
29	P13SCSB0110F	DF075019	06/21/05	1451
30	P13SCSB0110FMS	DF075019MS	06/21/05	1531
31	P13SCSB0110FMSD	DF075019MSD	06/21/05	1610
32	DSTD3	DSTD 1.0 MG/	06/21/05	1730

8D
SEMIVOLATILE ANALYTICAL SEQUENCE

Lab Name: COLUMBIA ANALYTICAL SERVICES - REDDING

Case No.: DF075 SDG No.: DF075

GC Column: RTX-5 ID: 0.53 (mm) ICAL Date(s): 06/17/05 06/17/05

Instrument ID: GCG

	CLIENT SAMPLE ID	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED
	=====	=====	=====	=====
01	DSTD 0.1	DSTD1	06/17/05	1350
02	DSTD 0.5	DSTD2	06/17/05	1430
03	DSTD 1.0	DSTD3	06/17/05	1509
04	DSTD 2.5	DSTD4	06/17/05	1549
05	DSTD 4.0	DSTD5	06/17/05	1827
06	QCALTSTD 1.0	QCALTSTD	06/17/05	2026
07	DSTD 2.5 MG/ML	DSTD4	06/21/05	1931
08	DWB20609	DWB20609	06/21/05	2010
09	DWB20609LCS	DWB20609LCS	06/21/05	2050
10	DWB20609LCSD	DWB20609LCSD	06/21/05	2130
11	P13SCSB0400R	DF075010	06/21/05	2209
12	DSTD 1.0 MG/ML	DSTD3	06/22/05	0247
13				
14				
15				
16				
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32				



AMENDMENT REPORT

Client: MACTEC INC.

Project: MACTEC/CAMP PARKS

Date: 8/9/2005

E-Data: NOT REQUIRED

Batch: DF076

Initiated By: Douglas Burnett

Tier: 3

Completed By: Douglas Burnett

Dept: CL SERV

Approved By: Douglas Burnett

REASON: Client Request

1. Amend case narrative to include comment about soil samples received in plastic sleeves rather than glass or metal
2. Amend case narrative to include comment on why Silica Gel cleanup was not performed.
3. Supply Chromatograms

COLUMBIA ANALYTICAL SERVICES, INC.

Client: MACTEC
Project: Camp Parks
Sample Matrix: Soil/Water

Service Request No.: DF076
Date Received: 6/4/05

CASE NARRATIVE

All analyses were performed consistent with the quality assurance program of Columbia Analytical Services, Inc. (CAS). This report contains analytical results for samples designated for Tier III validation deliverables.

Sample Receipt

Twenty soil samples were received for analysis at Columbia Analytical Services on 6/4/05. The following discrepancy was noted upon initial sample inspection:

- On COC #1110, the matrix of the samples was either unmarked or marked as water. The samples are soil matrix.
- Soil samples were received in plastic sleeves rather than glass or metal. Per instruction from the project manager on 6/6/05, proceed with analysis.

The samples were received in good condition and otherwise consistent with the accompanying chain of custody form. The samples were stored in a refrigerator at 4°C upon receipt at the laboratory.

Diesel Range Organics by EPA Method 8015B

Continuing Calibration Verification Exceptions:

The upper control criterion was exceeded for the following analytes in Continuing Calibration Verification (CCV) G0630013 (6/30/05 18:40): Octacosane and Triacontane. The surrogate recoveries in all of the field samples as well as the blank and LCS analyzed in this sequence met acceptance criteria. Therefore, the data quality is not affected. No further corrective action was required.

Surrogate Exceptions:

The control criteria were exceeded for the following surrogates in sample P13SCSB1100F due to matrix interferences: Octacosane and Triacontane. Due to the presence of non-target background components that prevented adequate resolution of the surrogate, accurate quantitation was not possible. No further corrective action was appropriate.

Matrix Spike Recovery Exceptions:

The matrix spike recovery of Diesel Fuel for sample P13SCSB0810F was outside the control criteria as a result of the heterogeneous character of the sample. The Relative Percent Difference (RPD) for the replicate analysis supports this conclusion. Since the unspiked samples contain high analyte concentrations relative to the amount spiked, the variability between replicates was sufficient to bias the percent recoveries outside the control criteria. The associated QA/QC results indicate the analysis was in control. No further corrective action was appropriate.

Elevated Method Reporting Limits:

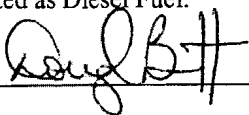
Samples P13SCSB0900F, P13SCSB1000F, P13SCSB0800F, P13SCSB0802F, P13SCSB0805F, P13SCSB0810F, P13SCSB0810FMS, and P13SCSB0810FMSD required dilution due to the presence of elevated levels of target and non-target analytes. The reporting limits are adjusted to reflect the dilution.

General Notes and Discussion:

Silica gel cleanup was not performed during preparation of these samples as requested in the QAPP. Samples were received into the laboratory on 6/4/05, prepared on 6/10/05; QAPP was received by CAS on 6/14/05.

Samples P13SCSB0900F, P13SCSB1000F, P13SCSB1100F, P13SCSB1102F, P13SCSB0805F contained an unknown hydrocarbon pattern within the Diesel Fuel range, but did not resemble Diesel Fuel. The samples were quantitated and reported as Diesel Fuel.

Approved by: _____



Date: _____

8-5-05

David Browne
MACTEC Inc.
5341 Old Redwood Highway
Suite 300
Petaluma, CA 94954

Columbia Analytical Services Report
Camp Parks Dublin
DF050076/DF076
37868

July 12, 2005

Submitted by:



Douglas Burnett
Project Manager/Client Services

The test results provided in this data package meet the requirements of the NELAC Standards unless noted in the case narrative report.

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Level III

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Current CAS Redding Accreditation Programs

Federal and National Programs

- U.S Air Force, Air Force Center for Environmental Excellence (AFCEE)
Approved laboratory for Wastewater and Hazardous Waste
- U.S. Army Corps of Engineers – MRD, HTRW Mandatory Center of Expertise
Validated for Wastewater and Hazardous Waste
- Department of the Navy, Naval Facilities Engineering Service Center (NFESC)
Approved laboratory for Wastewater and Hazardous Waste

State and Local Programs

- State of Arizona, Department of Health Services
Approved laboratory for Hazardous Waste
Lab ID# AZ0604
- State of Arkansas, Department of Environmental Quality
Approved laboratory for Wastewater and Hazardous Waste
Lab ID# None
- State of California, Department of Health Services, National Environmental Laboratory Accreditation Program (NELAP)
Approved laboratory for Drinking Water, Wastewater and Hazardous Waste
Lab ID# 01105CA
 - Los Angeles County Sanitation District
Approved laboratory for Wastewater
Lab ID# 10243
- State of Florida, Department of Health (NELAP)
Approved Environmental Testing Laboratory for Wastewater and Hazardous Waste
Lab ID# E87203
- State of Kansas, Department of Health and Environment (NELAP)
Approved laboratory for Hazardous Waste
Lab ID# E-10323
- State of Massachusetts, Department of Environmental Protection
Approved laboratory for Drinking Water, Wastewater
Lab ID# M-CA025
- State of Oklahoma, Department of Environmental Quality
Approved laboratory for General Water Quality/Sludge Testing
Lab ID# 9952
- State of Oregon, Department of Human Resources, Health Division (ORELAP)
Approved laboratory for Drinking Water, Wastewater, and Hazardous Waste
Lab ID# CA200004
- State of Utah, Department of Health, Division of Laboratory Services (NELAP)
Approved laboratory for Wastewater and Hazardous Waste
Lab ID# QUAL1
- State of Washington, Department of Ecology, Environmental Laboratory Accreditation Program
Approved laboratory for Wastewater and Hazardous Waste
Lab ID# C037
- State of Wisconsin, Department of Ecology
Approved laboratory for Wastewater and Hazardous Waste
Lab ID# 999767340

Organic Data Qualifiers

- A -- This qualifier indicates that a TIC is a suspected aldol-condensation product
- B -- This flag is used when the analyte is found in the associated blank as well as the sample. This notation indicates possible blank contamination and suggests that the data user evaluate these compounds and their amounts carefully.
- C -- The "C" flag indicates the presence of this compound has been confirmed by the GC/MS analysis.
- D -- This qualifier is used for all the compounds identified in an analysis at a secondary dilution factor. "D" qualifiers are used only for the samples reported at more than one dilution factor.
- E -- This flag indicates that the value reported exceeds the linear calibration range for that compound. Therefore, the sample should be reanalyzed at the appropriate dilution. The "E" qualified amount is an estimated concentration, and the results of the dilution will be reported on a separate Form I.
- I -- The qualifier indicates that the reporting limit to the "I" qualifier has been raised. It is used when the chromatographic interference prohibits detection of a compound at a level below the concentration expressed on the Form I.
- J -- Indicates an estimated value. It is used when the data indicates the presence of a target compound below the reporting limit or the presence of a Tentatively Identified Compound (TIC).
- N -- This qualifier indicates presumptive evidence of a compound. This flag is only used for Tentatively Identified Compounds (TIC), where the identification is based on a mass spectral library research. It is applied to all TIC results. For generic characterization of a TIC, such as chlorinated hydrocarbon, the "N" qualifier is not used.
- P -- This qualifier is used for target analytes when there is a greater than 40% difference for detected concentrations between the two columns or detectors. The concentration value is reported on Form I and flagged with a "P".
- U -- Indicates the compound was analyzed for but not detected. The number adjacent to the "U" qualifier indicates the reporting limit for that compound. The reporting limit can vary from sample to sample depending on dilution factors or percent moisture adjustments when indicated.

Organic Sample ID Qualifiers

The qualifiers that may be appended to the Lab Sample ID and/or the Client Sample ID for organic analysis are defined below:

- DL -- Diluted reanalysis. Indicates that the results were determined in an analysis of a secondary dilution of a sample or extract. A digit to indicate multiple dilutions of the sample or extract may follow the "DL" suffix. The results of more than one diluted reanalysis may be reported.
- MS -- Matrix spike (may be followed by a digit to indicate multiple matrix spikes within a sample set).
- MSD -- Matrix spike duplicate (may be followed by a digit to indicate multiple matrix spikes within a sample set).
- R -- Reanalysis. The extract was reanalyzed without re-extraction. The "R" is not used if the sample was also re-extracted. May be followed by a digit to indicate multiple reanalysis of the sample at the same dilution.
- RE -- Re-extraction analysis. The sample was re-extracted and reanalyzed. May be followed by a digit to indicate multiple re-extracted analysis of the same sample at the same dilution.

Sample ID Cross-reference Table

CAS Lab Sample ID	Client Sample ID	Receive Date	Collect Date	Sample Matrix	Additional Description
FS = Field Sample; MS = Matrix Spike; MSD = Matrix Spike Duplicate; NON = Non-Sample Type (Internal Admin)					
DF076001	FS	P13SCSB0900F	06/04/05	06/03/05	13:50 Soil
DF076002	FS	P13SCSB0902F	06/04/05	06/03/05	13:53 Soil
DF076003	FS	P13SCSB0905F	06/04/05	06/03/05	13:55 Soil
DF076004	FS	P13SCSB0910F	06/04/05	06/03/05	14:00 Soil
DF076005	FS	P13SCSB1000F	06/04/05	06/03/05	14:10 Soil
DF076006	FS	P13SCSB1002F	06/04/05	06/03/05	14:15 Soil
DF076007	FS	P13SCSB1005F	06/04/05	06/03/05	14:20 Soil
DF076008	FS	P13SCSB1010F	06/04/05	06/03/05	14:30 Soil
DF076009	FS	P13SCSB1100F	06/04/05	06/03/05	14:40 Soil
DF076010	FS	P13SCSB1102F	06/04/05	06/03/05	14:43 Soil
DF076011	FS	P13SCSB1200F	06/04/05	06/03/05	11:20 Soil
DF076012	FS	P13SCSB1205F	06/04/05	06/03/05	11:30 Soil
DF076013	FS	P13SCSB1210F	06/04/05	06/03/05	11:40 Soil
DF076014	FS	P13SCSB1300F	06/04/05	06/03/05	11:50 Soil
DF076015	FS	P13SCSB1305F	06/04/05	06/03/05	12:00 Soil
DF076016	FS	P13SCSB1310F	06/04/05	06/03/05	12:10 Soil
DF076017	FS	P13SCSB0800F	06/04/05	06/03/05	13:20 Soil
DF076018	FS	P13SCSB0802F	06/04/05	06/03/05	13:25 Soil
DF076019	FS	P13SCSB0805F	06/04/05	06/03/05	13:27 Soil
DF076020	FS	P13SCSB0810F	06/04/05	06/03/05	13:35 Soil

The above lab sample ID's and cross reference information apply to samples as received by the laboratory. Modifiers to the lab sample ID may be added for internal tracking purposes. Any modified sample ID will be reflected in the appropriate case narrative only.

CASE NARRATIVE

COLUMBIA ANALYTICAL SERVICES, INC.

Client: MACTEC
Project: Camp Parks
Sample Matrix: Soil/Water

Service Request No.: DF076
Date Received: 6/4/05

CASE NARRATIVE

All analyses were performed consistent with the quality assurance program of Columbia Analytical Services, Inc. (CAS). This report contains analytical results for samples designated for Tier III validation deliverables.

Sample Receipt

Twenty soil samples were received for analysis at Columbia Analytical Services on 6/4/05. The following discrepancy was noted upon initial sample inspection:

- On COC #1110, the matrix of the samples was either unmarked or marked as water. The samples are soil matrix.

The samples were received in good condition and otherwise consistent with the accompanying chain of custody form. The samples were stored in a refrigerator at 4°C upon receipt at the laboratory.

Diesel Range Organics by EPA Method 8015B

Continuing Calibration Verification Exceptions:

The upper control criterion was exceeded for the following analytes in Continuing Calibration Verification (CCV) G0630013 (6/30/05 18:40): Octacosane and Triacontane. The surrogate recoveries in all of the field samples as well as the blank and LCS analyzed in this sequence met acceptance criteria. Therefore, the data quality is not affected. No further corrective action was required.

Surrogate Exceptions:

The control criteria were exceeded for the following surrogates in sample P13SCSB1100F due to matrix interferences: Octacosane and Triacontane. Due to the presence of non-target background components that prevented adequate resolution of the surrogate, accurate quantitation was not possible. No further corrective action was appropriate.

Matrix Spike Recovery Exceptions:

The matrix spike recovery of Diesel Fuel for sample P13SCSB0810F was outside the control criteria as a result of the heterogeneous character of the sample. The Relative Percent Difference (RPD) for the replicate analysis supports this conclusion. Since the unspiked samples contain high analyte concentrations relative to the amount spiked, the variability between replicates was sufficient to bias the percent recoveries outside the control criteria. The associated QA/QC results indicate the analysis was in control. No further corrective action was appropriate.

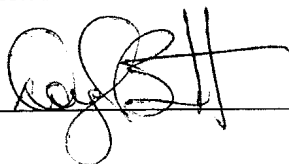
Elevated Method Reporting Limits:

Samples P13SCSB0900F, P13SCSB1000F, P13SCSB0800F, P13SCSB0802F, P13SCSB0805F, P13SCSB0810F, P13SCSB0810FMS, and P13SCSB0810FMDS required dilution due to the presence of elevated levels of target and non-target analytes. The reporting limits are adjusted to reflect the dilution.

Sample Notes and Discussion

Samples P13SCSB0900F, P13SCSB1000F, P13SCSB1100F, P13SCSB1102F, P13SCSB0805F contained an unknown hydrocarbon pattern within the Diesel Fuel range, but did not resemble Diesel Fuel. The samples were quantitated and reported as Diesel Fuel.

Approved by: _____



Date: _____

7-12-05

CHAIN OF CUSTODY DOCUMENTATION



5250148

5341 Old Redwood Highway
Suite 300
Petaluma, CA 94954
(707) 793-3800

CHAIN OF CUSTODY FORM

Samplers: David Browne/Scott TuckerSeq. No.: No 1110Lab: Columbia

Job Number:

3618048128.02

Name/Location:

CAMP PARKS, Dublin

Project Manager:

Beth Flynn

Recorder:

David Browne
(Signature Required)

DP076 2432 3/4

MATRIX			# CONTAINERS & PRESERV.				SAMPLE NUMBER				DATE			
Water	Soil	Air	Unpres.	H2SO4	HNO3	HCL	YR	SEQ	YR	MO	DAY	TIME		
X			1				P13	SCSB1200	F	05	06	0311	20	
X			1				P13	SCSB1205	F	05	06	0311	30	
X			1				P13	SCSB1210	F	05	06	0311	40	
X			1				P13	SCSB1300	F	05	06	0311	50	
X			1				P13	SCSB1305	F	05	06	0312	00	
X			1				P13	SCSB1310	F	05	06	0312	10	
							P13	SCSB0800	F	05	06	0313	20	
							P13	SCSB0802	F	05	06	0313	25	
							P13	SCSB0805	F	05	06	0313	30	
							P13	SCSB0810	F	05	06	0313	35	

ADDITIONAL INFORMATION													
SAMPLE NUMBER										TURNAROUND TIME/ REMARKS			
YR	SEQ												
										STANDARD TAT			

COOLER RECEIPT FORM

Project/Client: MACTEC / CAMP PARKS Batch No.: DF076
1. Cooler(s)/Sample(s) received on: 6/4/05 Shipped via: FX
Shipping Bill # (s): SEE DF-075 # of Coolers/Packages 1
2. Radiological Screening by: [Signature] ☒ Acceptable ☐ Rejected
3. Custody seals on outside of cooler: ☒ YES ☐ NO ☐ N/A
If yes, where? Front ☒ Rear ☐ Lt Side ☐ Rt Side ☐
Seals intact: ☒ YES ☐ NO

COOLER/SAMPLE PROCESSING

4. Sample Processing/Tagging by: [Signature]
5. Cooler(s)/Sample(s) Temp's: 4°C
(or)
Temp. Blank (if included): _____
6. Type of packing material (circle): ☒ Ice ☐ Blue Ice ☒ Bubble Wrap ☒ Bubble Bags ☒ Zip Locks ☐ Webbing
Other: _____
7. Custody papers properly filled out (ink, signed, dated, released, etc.)? ☒ YES ☐ NO
8. Containers arrived in good condition (not broken, leaking, etc.)? ☒ YES ☐ NO
9. Samples received with adequate holding time remaining to conduct analysis? ☒ YES ☐ NO
10. Container labels complete (i.e. analysis, preservation, date/time, etc.)? ☒ YES ☐ NO
11. Container labels and tags agree with custody papers? ☒ YES ☐ NO
12. Correct types of containers used for the tests indicated?
a.) Adequate sample received? ☒ YES ☐ NO If not, note on Exception Report.
13. Containers supplied by: CAS ☒ Other
14. Preserved containers received with the appropriate preservative? YES ☐ NO ☒ N/A
pH: _____ (or) See pH log.
15. VOA vials free of air bubbles? YES ☐ NO ☒ N/A
16. Trip Blank preparation date: _____ CAS ☐ Other ☒ N/A
17. Volatile Soil samples: Encores or Plugs in Vials
Freezer or GC/MS Date: _____ Time: ☒ N/A

See Exception Report for discrepancies.

SAMPLE RECEIPT EXCEPTION REPORT

Sample Batch #: DF076 Client/Project: MALTEC / CAMP PARKS

1 Holding Time Issues	2 Temperature Issues	3 COC/Label Issues	4 Container Issues	5 Other

5.) ALL SOIL SAMPLES RECEIVED IN PLASTIC CONTAINERS.
ORGANICS REQUIRE GLASS OR METAL.

3.) PAGE 2, COC# 1110, SHOWS MATRIX AS WATER.
ALL SAMPLES ARE SOIL.

Corrective Actions Taken

MATRIX AS SOIL CONFIRMED
④ 6/9/05

Initiated By: PS

Date: 6/4/05

Client: _____

Client Notification By: _____

Date: _____

GC TPH DIESEL

Sample data

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT ID.

P13SCSB0900F

Lab Name: COLUMBIA ANALYTICAL SERVICES - REDDING

Case No.: DF076 SDG No.: DF076

Lab Sample ID: DF076001

Matrix: SOIL Level: LOW

Lab File ID: F0706013

Sample Wt/Vol: 50.0 G

Date Collected: 06/03/05

Extract Vol: 1 ML

Date Extracted: 06/10/05

% Moisture: not dec. 21

Date Analyzed: 07/06/05

Extraction Type: SONICATION

Dilution Factor: 20.0

CAS NO.	COMPOUND	Units: mg/Kg	MDL	RL	RESULT	Q
	PHCC10C24---TPH-DIESEL (C10-C24)		16	250	320	

Data File: \\redding3\acqu\Target\Ch

Page 3

Date : 06-JUL-2005 19:45

Client ID: P13SCSB0900F

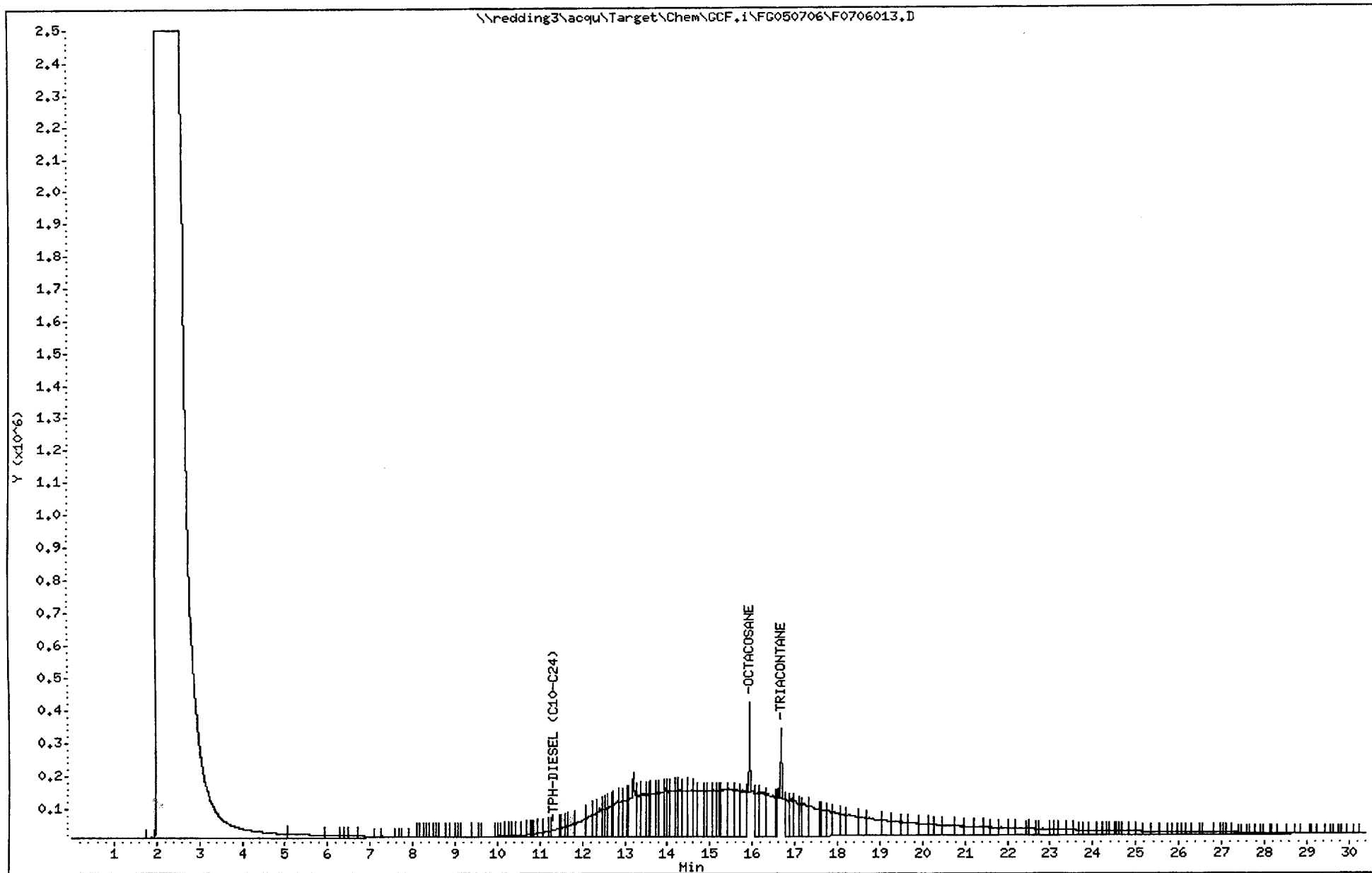
Sample Info: DF076001

Instrument: GCF.i

Operator:

Column diameter: 0.53

Column phase: RTX-5



1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT ID.

P13SCSB0902F

Lab Name: COLUMBIA ANALYTICAL SERVICES - REDDING

Case No.: DF076 SDG No.: DF076

Lab Sample ID: DF076002

Matrix: SOIL Level: LOW

Lab File ID: G0630005

Sample Wt/Vol: 49.8 G

Date Collected: 06/03/05

Extract Vol: 1 ML

Date Extracted: 06/10/05

% Moisture: not dec. 21

Date Analyzed: 06/30/05

Extraction Type: SONICATION

Dilution Factor: 1.0

CAS NO.	COMPOUND	Units: mg/Kg	MDL	RL	RESULT	Q
	PHCC10C24---TPH-DIESEL (C10-C24)		0.80	13	3.3	J

Data File: \\redding3\acqu\Target\Ch 1000 115015A\G0630005.D

Date : 30-JUN-2005 13:19

Client ID: P13SCSB0902F

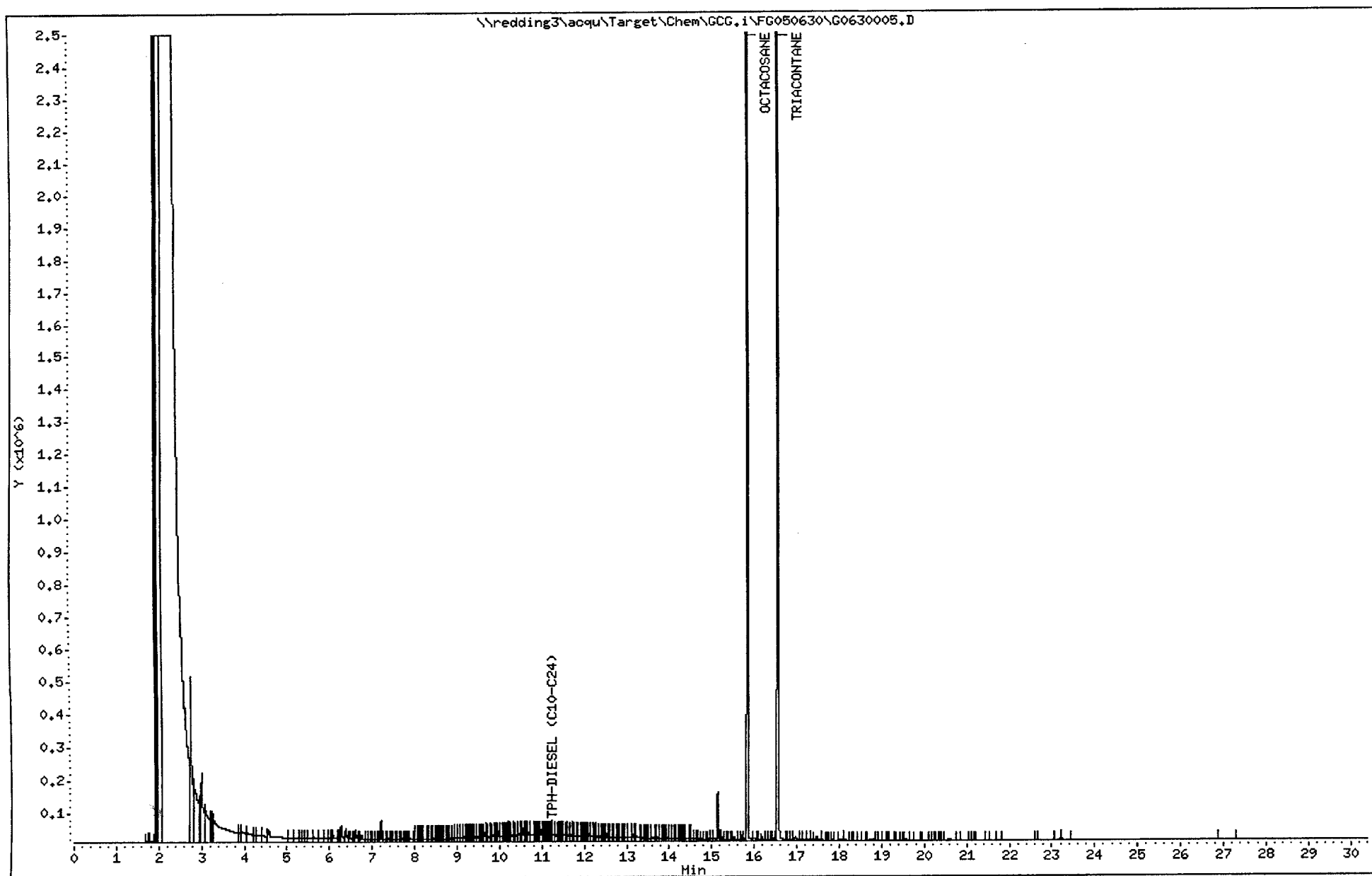
Sample Info: DF076002

Instrument: GCG.i

Operator:

Column diameter: 0.53

Column phase: RTX-5



1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT ID.

P13SCSB0905F

Lab Name: COLUMBIA ANALYTICAL SERVICES - REDDING

Case No.: DF076 SDG No.: DF076 Lab Sample ID: DF076003
Matrix: SOIL Level: LOW Lab File ID: G0630006
Sample Wt/Vol: 49.6 G Date Collected: 06/03/05
Extract Vol: 1 ML Date Extracted: 06/10/05
% Moisture: not dec. 21 Date Analyzed: 06/30/05
Extraction Type: SONICATION Dilution Factor: 1.0

CAS NO.	COMPOUND	Units: mg/Kg	MDL	RL	RESULT	Q
	PHCC10C24---TPH-DIESEL (C10-C24)		0.80	13	2.5	J

Data File: \\redding3\acqu\Target\Cr

Date : 30-JUN-2005 13:59

Client ID: P13SCSB0905F

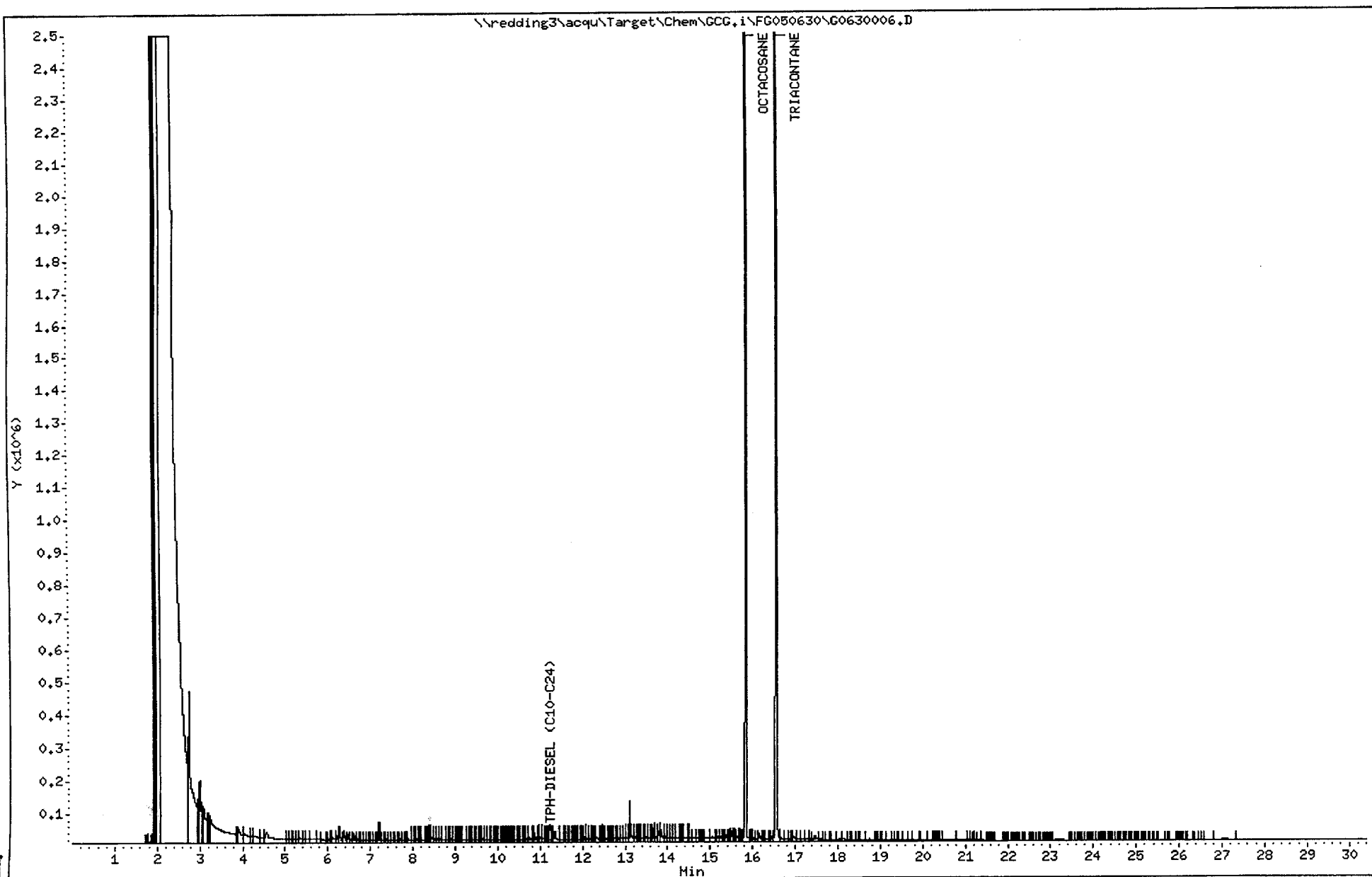
Sample Info: DF076003

Instrument: GCG.i

Operator:

Column diameter: 0.53

Column phase: RTX-5



1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT ID.

P13SCSB0910F

Lab Name: COLUMBIA ANALYTICAL SERVICES - REDDING

Case No.: DF076 SDG No.: DF076

Lab Sample ID: DF076004

Matrix: SOIL Level: LOW

Lab File ID: G0630007

Sample Wt/Vol: 50.6 G

Date Collected: 06/03/05

Extract Vol: 1 ML

Date Extracted: 06/10/05

% Moisture: not dec. 19

Date Analyzed: 06/30/05

Extraction Type: SONICATION

Dilution Factor: 1.0

CAS NO.	COMPOUND	Units: mg/Kg	MDL	RL	RESULT	Q
PHCC10C24----	TPH-DIESEL (C10-C24)		0.78	12	12	U

Data File: \\redding3\acqu\Target\Chem

Date : 30-JUN-2005 14:39

Client ID: P13SCSB0910F

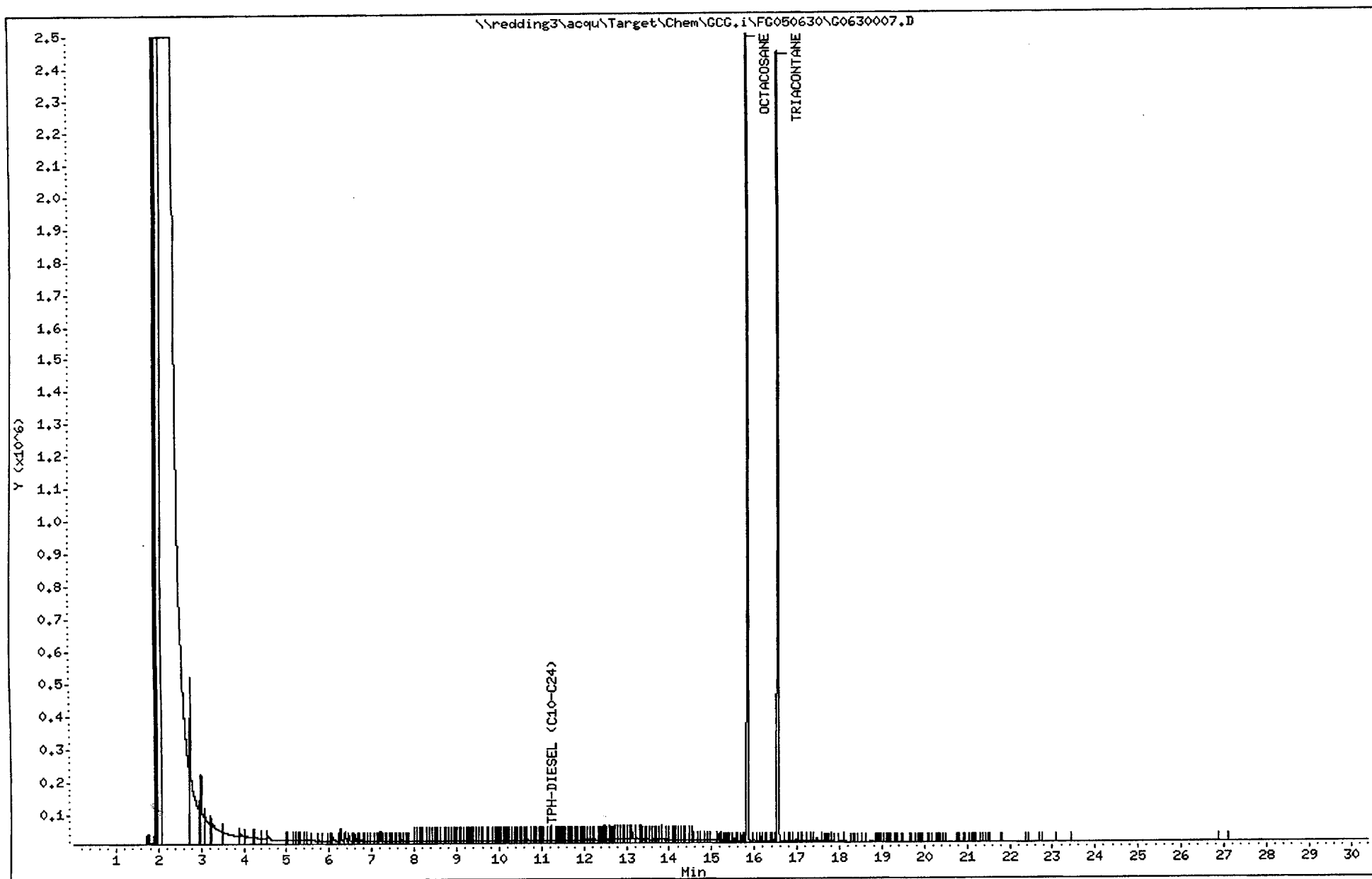
Sample Info: DF076004

Instrument: GCG.i

Operator:

Column diameter: 0.53

Column phase: RTX-5



1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT ID.

P13SCSB1000F

Lab Name: COLUMBIA ANALYTICAL SERVICES - REDDING

Case No.: DF076 SDG No.: DF076

Lab Sample ID: DF076005

Matrix: SOIL Level: LOW

Lab File ID: F0706014

Sample Wt/Vol: 49.5 G

Date Collected: 06/03/05

Extract Vol: 1 ML

Date Extracted: 06/10/05

% Moisture: not dec. 14

Date Analyzed: 07/06/05

Extraction Type: SONICATION

Dilution Factor: 10.0

CAS NO.	COMPOUND	Units: mg/Kg	MDL	RL	RESULT	Q
	PHCC10C24---TPH-DIESEL (C10-C24)		7.4	120	340	

Data File: \\redding3\acq\Target\Che

Date : 06-JUL-2005 20:25

Client ID: P13SCSB1000F

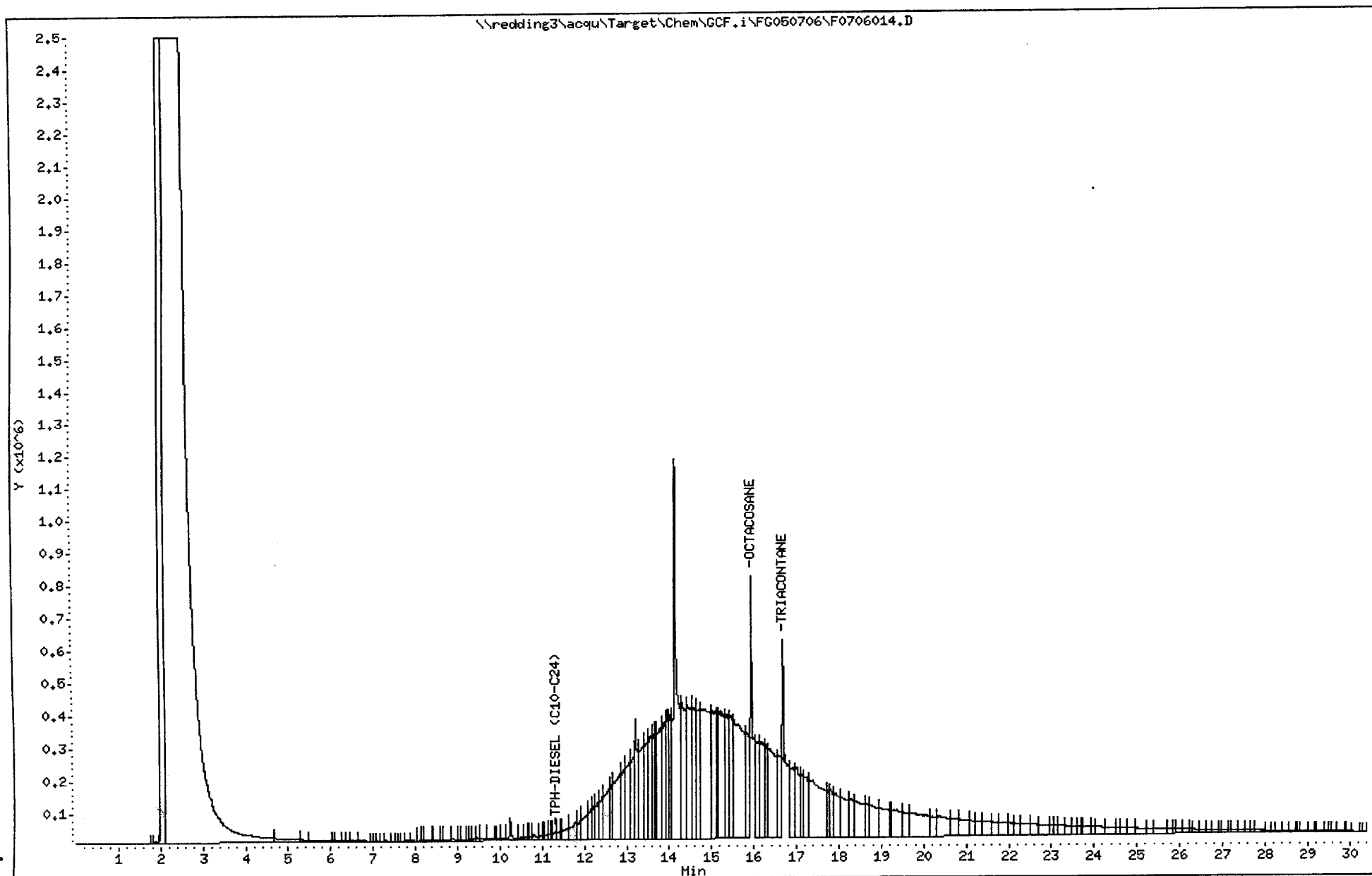
Sample Info: DF076005

Instrument: GCF.i

Operator:

Column diameter: 0.53

Column phase: RTX-5



1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT ID.

P13SCSB1002F

Lab Name: COLUMBIA ANALYTICAL SERVICES - REDDING

Case No.: DF076 SDG No.: DF076

Lab Sample ID: DF076006

Matrix: SOIL Level: LOW

Lab File ID: G0630008

Sample Wt/Vol: 50.9 G

Date Collected: 06/03/05

Extract Vol: 1 ML

Date Extracted:

% Moisture: not dec. 16

Date Analyzed: 06/30/05

Extraction Type: SONICATION

Dilution Factor: 1.0

CAS NO.	COMPOUND	Units: mg/Kg	MDL	RL	RESULT	Q
	PHCC10C24---TPH-DIESEL (C10-C24)		0.75	12	11	J

Data File: \\redding3\acq\Target\Chem\GCC.i\FC050630\G0630008.D

Page 3

Date : 30-JUN-2005 15:19

Client ID: P13SCSB1002F

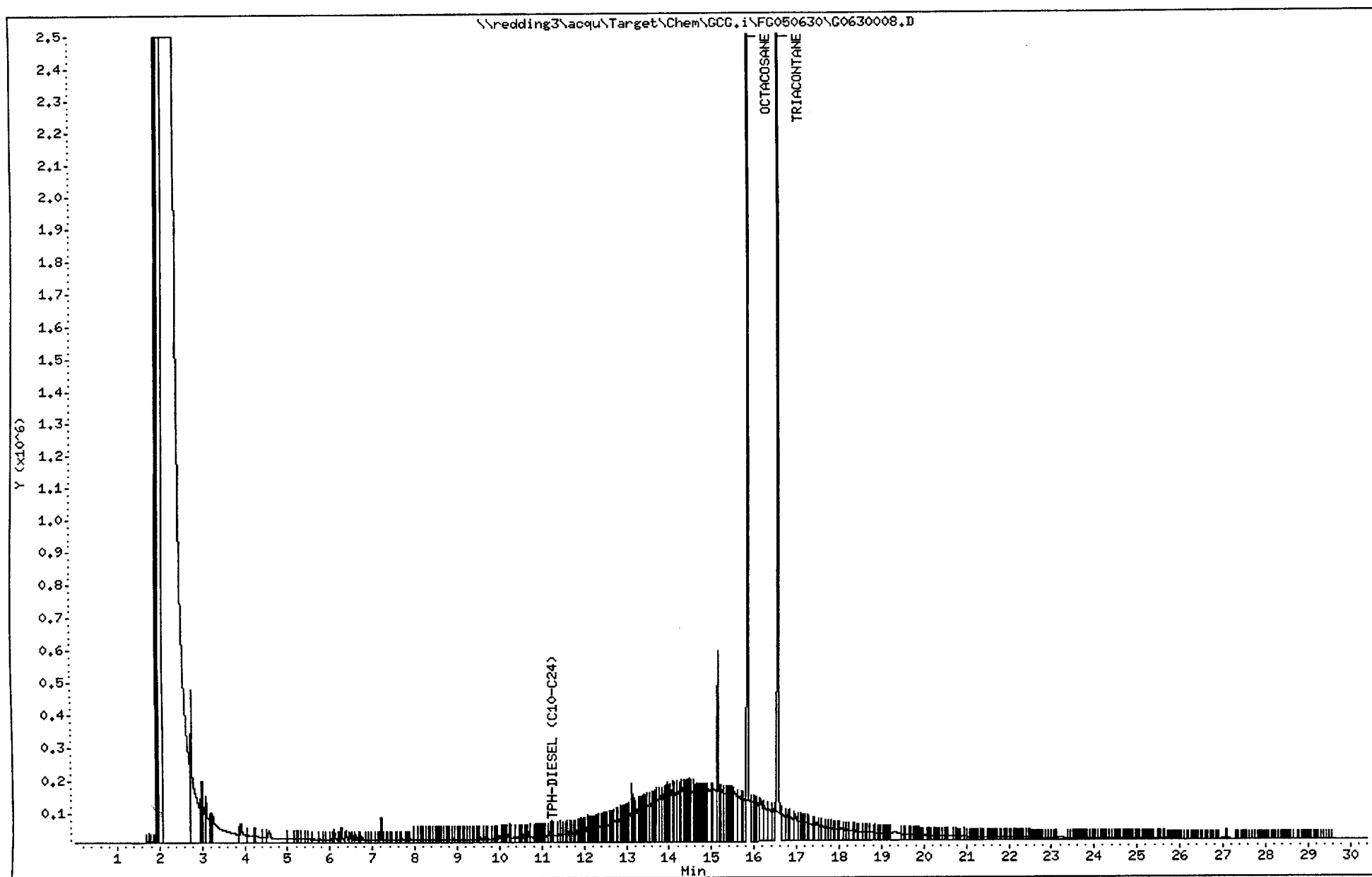
Sample Info: DF076006

Instrument: GCC.i

Operator:

Column diameter: 0.53

Column phase: RTX-5



1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT ID.

P13SCSB1005F

Lab Name: COLUMBIA ANALYTICAL SERVICES - REDDING

Case No.: DF076 SDG No.: DF076

Lab Sample ID: DF076007

Matrix: SOIL Level: LOW

Lab File ID: G0630009

Sample Wt/Vol: 50.6 G

Date Collected: 06/03/05

Extract Vol: 1 ML

Date Extracted:

% Moisture: not dec. 32

Date Analyzed: 06/30/05

Extraction Type: SONICATION

Dilution Factor: 1.0

CAS NO.	COMPOUND	Units: mg/Kg	MDL	RL	RESULT	Q
	PHCC10C24---TPH-DIESEL (C10-C24)		0.93	14	14	U

Date : 30-JUN-2005 15:59

Client ID: P13SCSB1005F

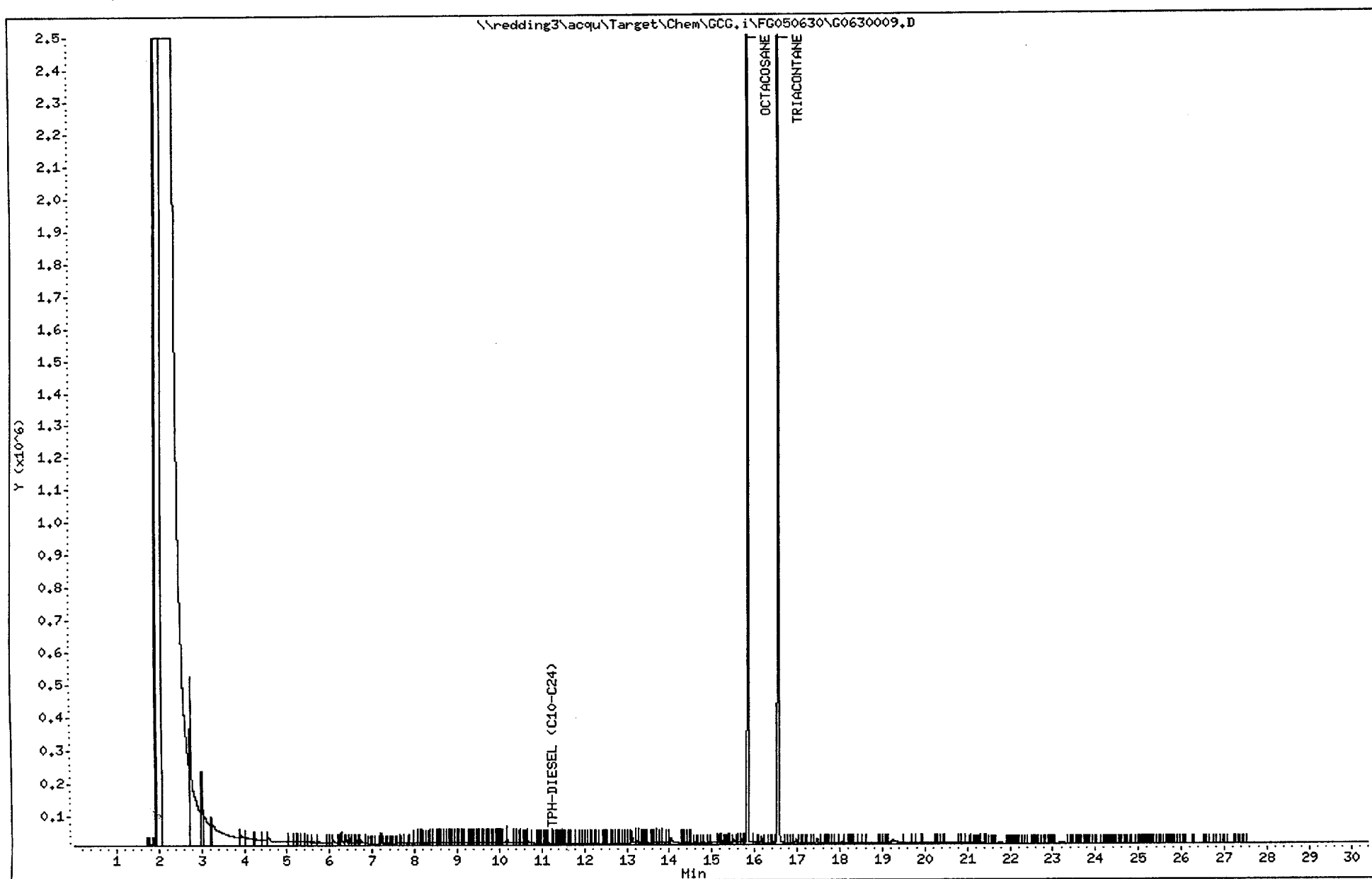
Sample Info: DF076007

Instrument: GCC.i

Operator:

Column diameter: 0.53

Column phase: RTX-5



1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT ID.

P13SCSB1010F

Lab Name: COLUMBIA ANALYTICAL SERVICES - REDDING

Case No.: DF076 SDG No.: DF076

Lab Sample ID: DF076008

Matrix: SOIL Level: LOW

Lab File ID: G0630010

Sample Wt/Vol: 49.6 G

Date Collected: 06/03/05

Extract Vol: 1 ML

Date Extracted:

% Moisture: not dec. 23

Date Analyzed: 06/30/05

Extraction Type: SONICATION

Dilution Factor: 1.0

CAS NO.	COMPOUND	Units: mg/Kg	MDL	RL	RESULT	Q
	PHCC10C24---TPH-DIESEL (C10-C24)		0.82	13	13	U

Date : 30-JUN-2005 16:39

Client ID: P13SCSB1010F

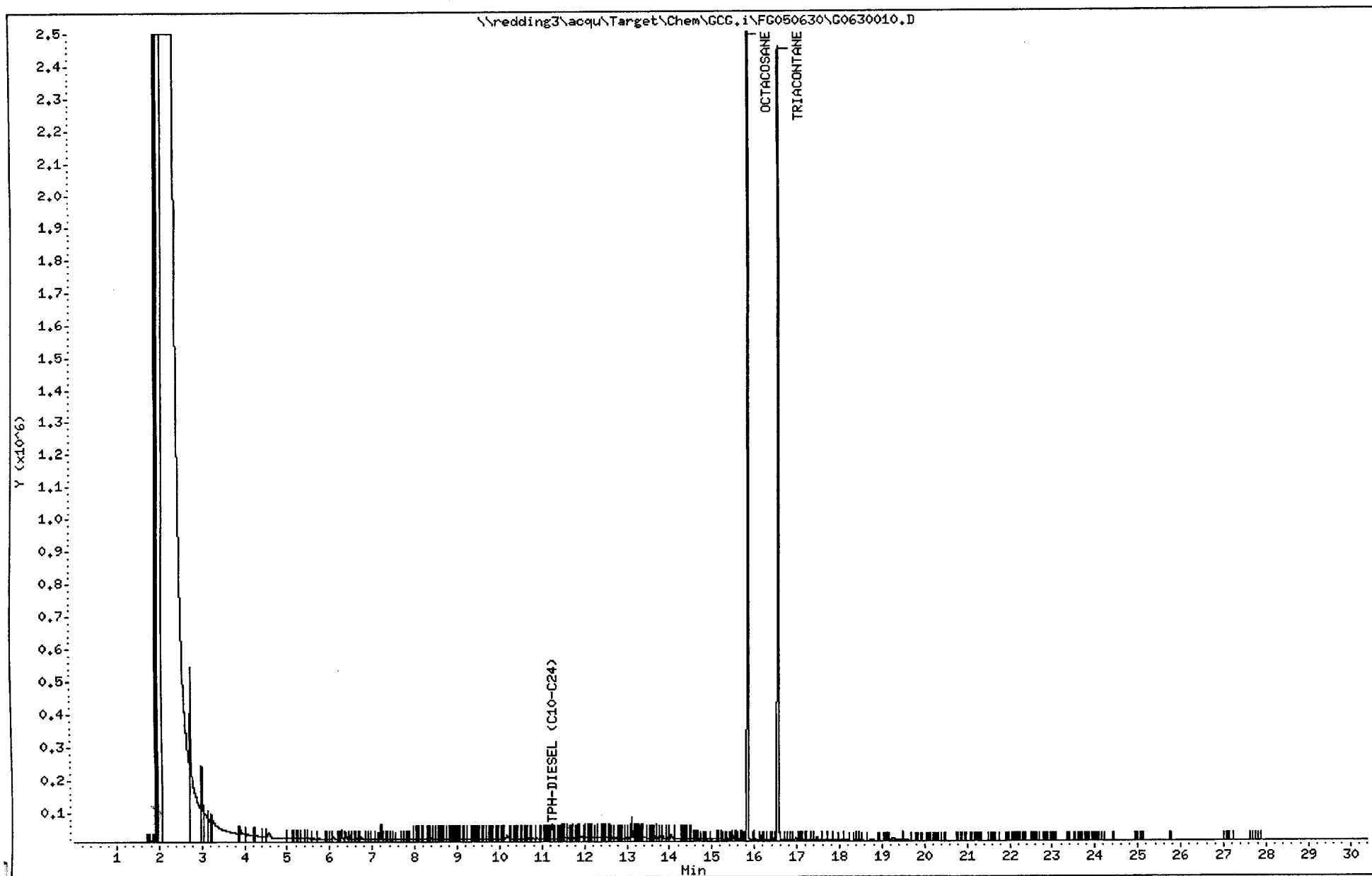
Sample Info: DF076008

Instrument: GCG.i

Operator:

Column diameter: 0.53

Column phase: RTX-5



1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT ID.

P13SCSB1100F

Lab Name: COLUMBIA ANALYTICAL SERVICES - REDDING

Case No.: DF076 SDG No.: DF076

Lab Sample ID: DF076009

Matrix: SOIL Level: LOW

Lab File ID: F0706015

Sample Wt/Vol: 50.4 G

Date Collected: 06/03/05

Extract Vol: 1 ML

Date Extracted: 06/10/05

% Moisture: not dec. 18

Date Analyzed: 07/06/05

Extraction Type: SONICATION

Dilution Factor: 1.0

CAS NO.	COMPOUND	Units: mg/Kg	MDL	RL	RESULT	Q
	PHCC10C24---TPH-DIESEL (C10-C24)		0.77	12	61	

Data File: \\redding3\acqui\Target\Chem\GCF.i\FG050706\F0706015.D

Page 3

Date : 06-JUL-2005 21:05

Client ID: P13SCSB1100F

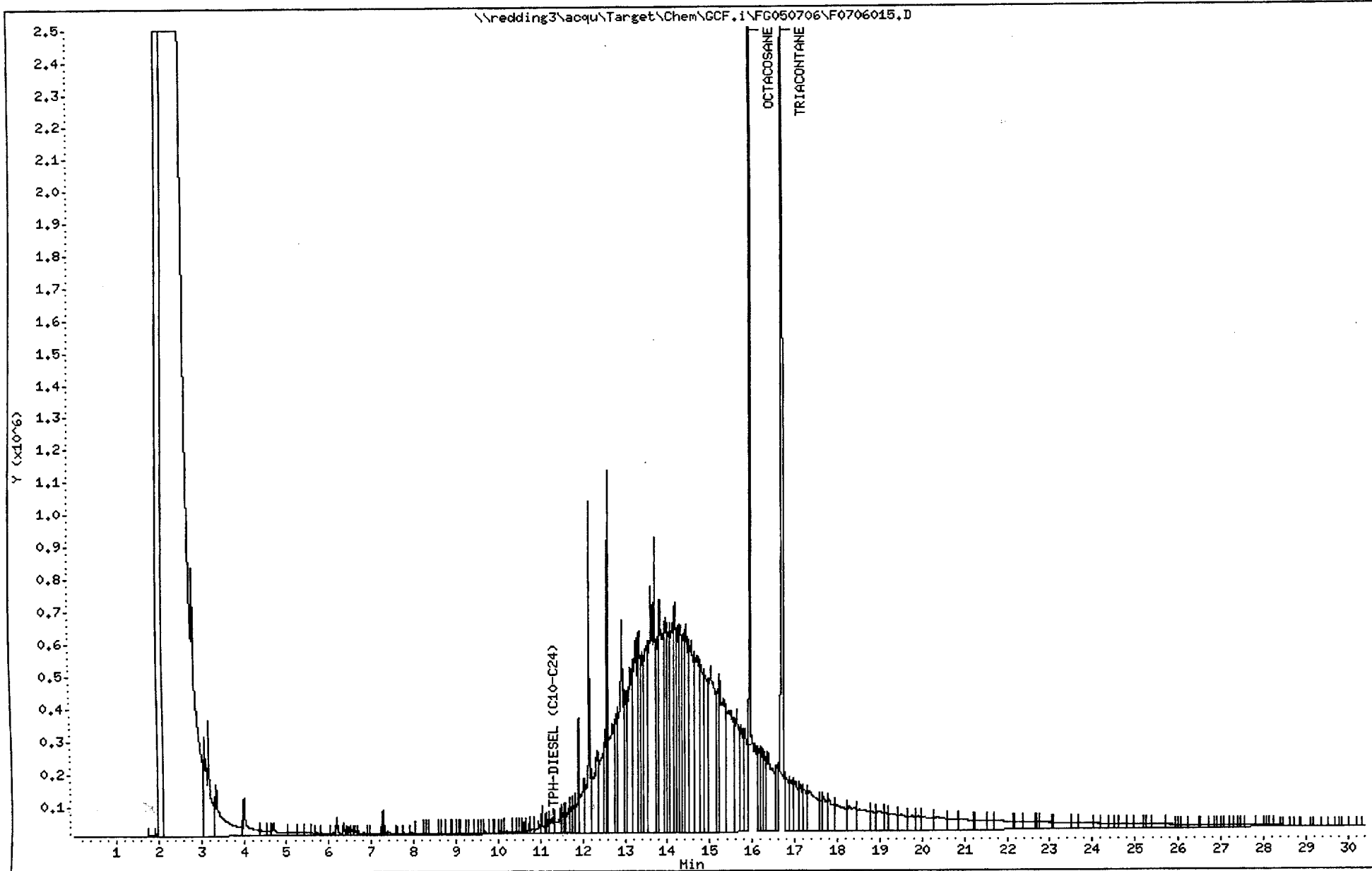
Sample Info: DF076009

Instrument: GCF.i

Operator:

Column diameter: 0.53

Column phase: RTX-5



1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT ID.

P13SCSB1102F

Lab Name: COLUMBIA ANALYTICAL SERVICES - REDDING

Case No.: DF076 SDG No.: DF076

Lab Sample ID: DF076010

Matrix: SOIL Level: LOW

Lab File ID: G0630011

Sample Wt/Vol: 49.8 G

Date Collected: 06/03/05

Extract Vol: 1 ML

Date Extracted: 06/10/05

% Moisture: not dec. 19

Date Analyzed: 06/30/05

Extraction Type: SONICATION

Dilution Factor: 1.0

CAS NO.	COMPOUND	Units: mg/Kg	MDL	RL	RESULT	Q
	PHCC10C24---TPH-DIESEL (C10-C24)		0.78	12	52	

Data File: \\redding3\acqu\Target\Ch

Date : 30-JUN-2005 17:19

Client ID: P13SCSB1102F

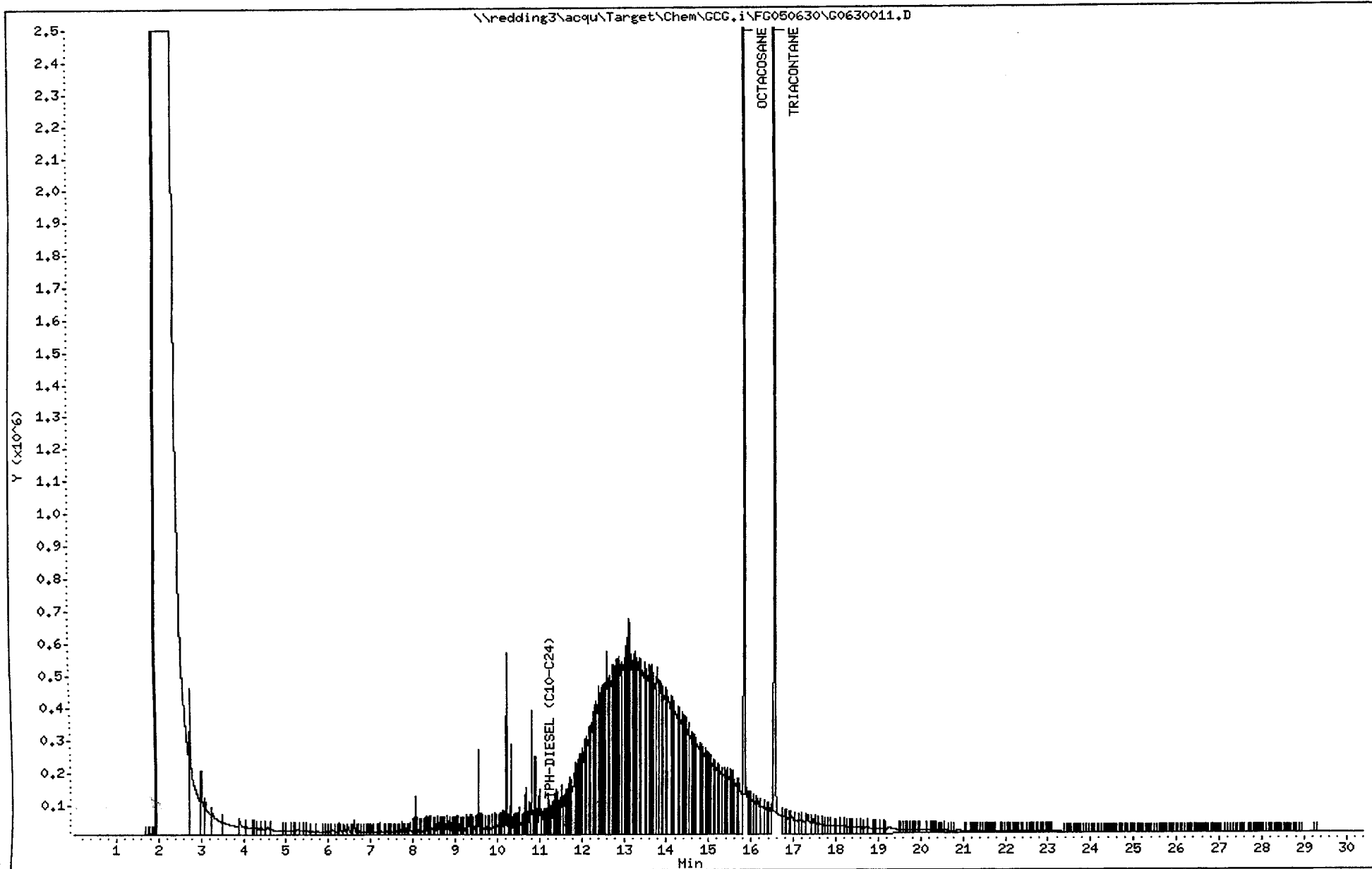
Sample Info: DF076010

Instrument: GCG.i

Operator:

Column diameter: 0.53

Column phase: RTX-5



1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT ID.

P13SCSB1200F

Lab Name: COLUMBIA ANALYTICAL SERVICES - REDDING

Case No.: DF076 SDG No.: DF076

Lab Sample ID: DF076011

Matrix: SOIL Level: LOW

Lab File ID: G0630014

Sample Wt/Vol: 50.0 G

Date Collected: 06/03/05

Extract Vol: 1 ML

Date Extracted:

% Moisture: not dec. 21

Date Analyzed: 06/30/05

Extraction Type: SONICATION

Dilution Factor: 1.0

CAS NO.	COMPOUND	Units: mg/Kg	MDL	RL	RESULT	Q
PHCC10C24---	TPH-DIESEL (C10-C24)		0.80	13	13	U

Date : 30-JUN-2005 19:19

Client ID: P13SCSB1200F

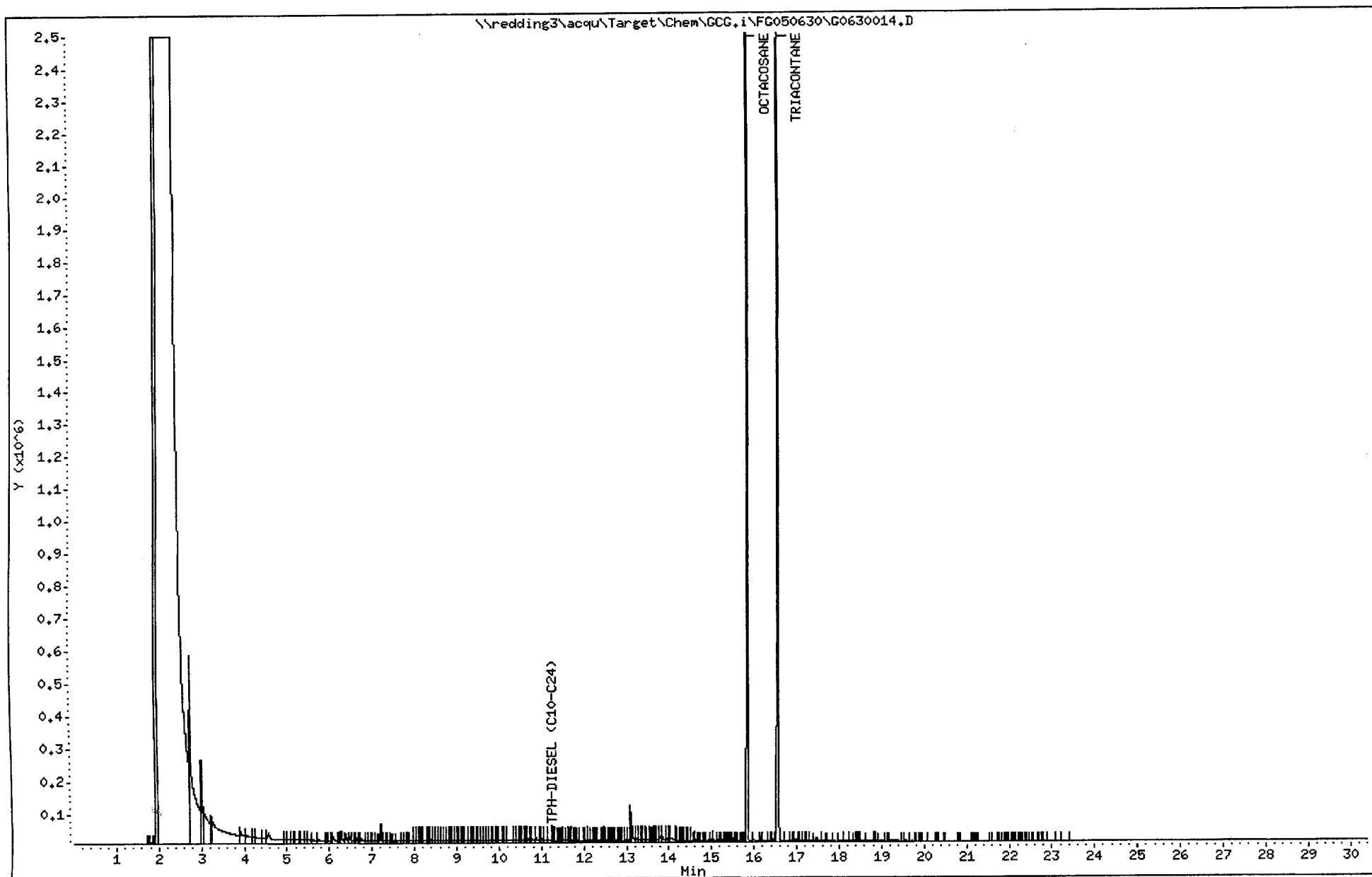
Sample Info: DF076011

Instrument: GCG.i

Operator:

Column diameter: 0,53

Column phase: RTX-5



1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT ID.

P13SCSB1205F

Lab Name: COLUMBIA ANALYTICAL SERVICES - REDDING

Case No.: DF076 SDG No.: DF076

Lab Sample ID: DF076012

Matrix: SOIL Level: LOW

Lab File ID: G0630015

Sample Wt/Vol: 49.4 G

Date Collected: 06/03/05

Extract Vol: 1 ML

Date Extracted:

% Moisture: not dec. 28

Date Analyzed: 06/30/05

Extraction Type: SONICATION

Dilution Factor: 1.0

CAS NO.	COMPOUND	Units: mg/Kg	MDL	RL	RESULT	Q
PHCC10C24---	TPH-DIESEL (C10-C24)		0.89	14	14	U

Data File: \\redding3\acqu\Target\Chem\GCG.i\FG050630\G0630015.D

Date : 30-JUN-2005 20:00

Client ID: P13SCSB1205F

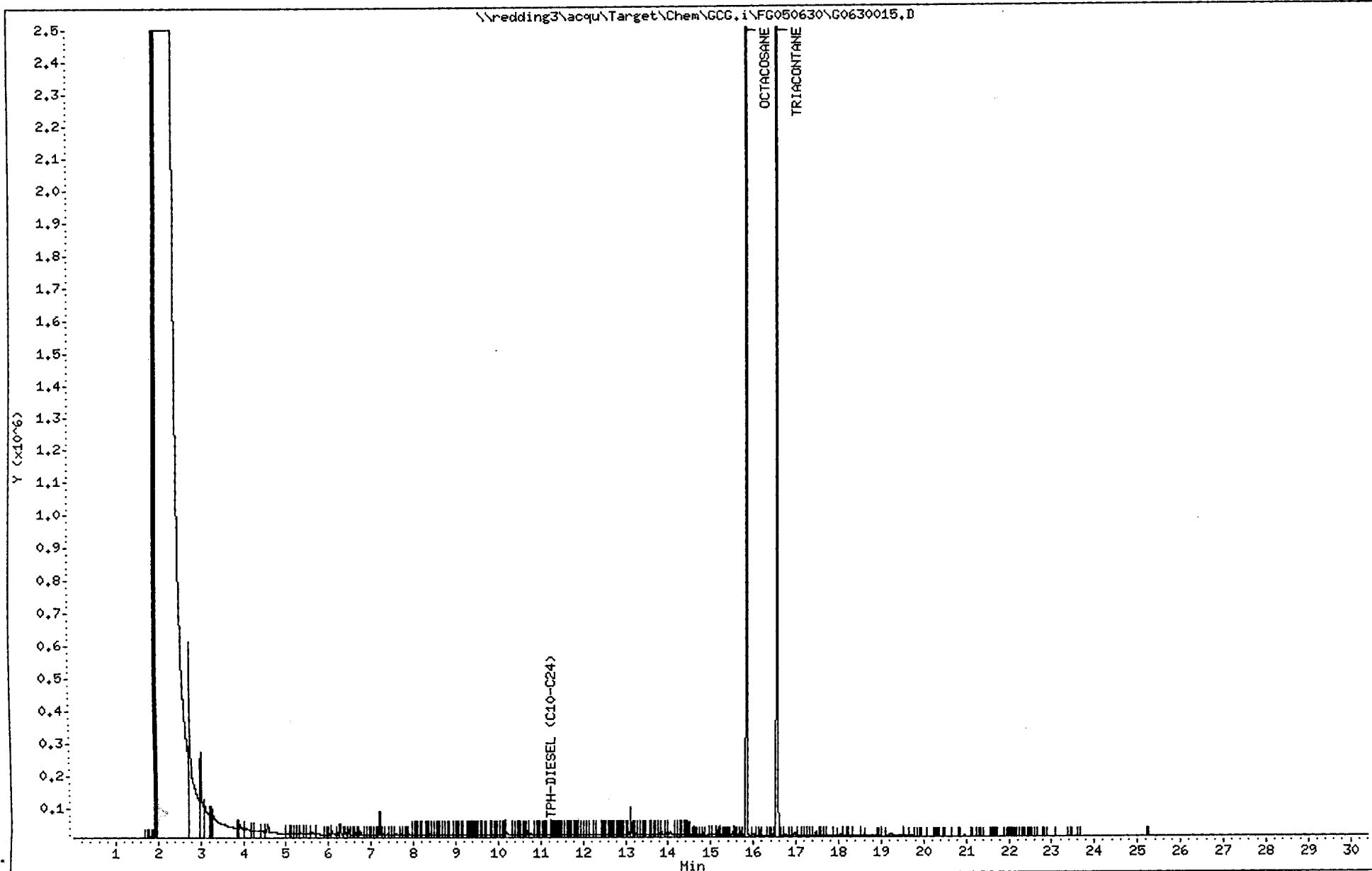
Sample Info: DF076012

Instrument: GCG.i

Operator:

Column diameter: 0.53

Column phase: RTX-5



1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT ID.

P13SCSB1210F

Lab Name: COLUMBIA ANALYTICAL SERVICES - REDDING

Case No.: DF076 SDG No.: DF076

Lab Sample ID: DF076013

Matrix: SOIL Level: LOW

Lab File ID: G0630016

Sample Wt/Vol: 49.4 G

Date Collected: 06/03/05

Extract Vol: 1 ML

Date Extracted:

% Moisture: not dec. 26

Date Analyzed: 06/30/05

Extraction Type: SONICATION

Dilution Factor: 1.0

CAS NO.	COMPOUND	Units: mg/Kg	MDL	RL	RESULT	Q
	PHCC10C24---TPH-DIESEL (C10-C24)		0.86	14	14	U

Data File: \\redding3\acqui\Target\Ch

Page 3

Date : 30-JUN-2005 20:40

Client ID: P13SCSB1210F

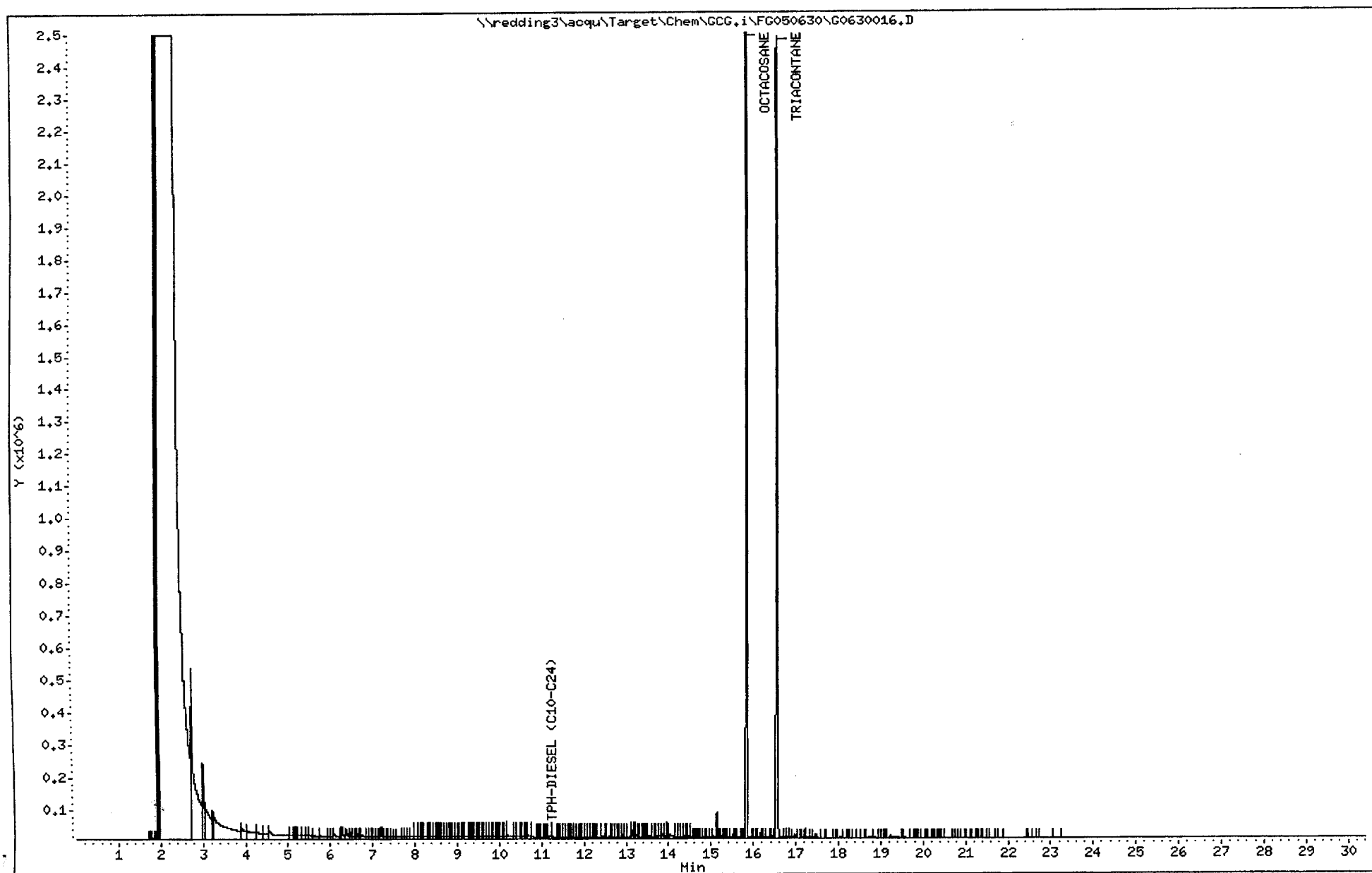
Sample Info: DF076013

Instrument: GCG.i

Operator:

Column diameter: 0.53

Column phase: RTX-5



1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT ID.

P13SCSB1300F

Lab Name: COLUMBIA ANALYTICAL SERVICES - REDDING

Case No.: DF076 SDG No.: DF076

Lab Sample ID: DF076014

Matrix: SOIL Level: LOW

Lab File ID: G0630017

Sample Wt/Vol: 50.4 G

Date Collected: 06/03/05

Extract Vol: 1 ML

Date Extracted:

% Moisture: not dec. 18

Date Analyzed: 06/30/05

Extraction Type: SONICATION

Dilution Factor: 1.0

CAS NO.	COMPOUND	Units: mg/Kg	MDL	RL	RESULT	Q
	PHCC10C24---TPH-DIESEL (C10-C24)		0.77	12	7.2	J

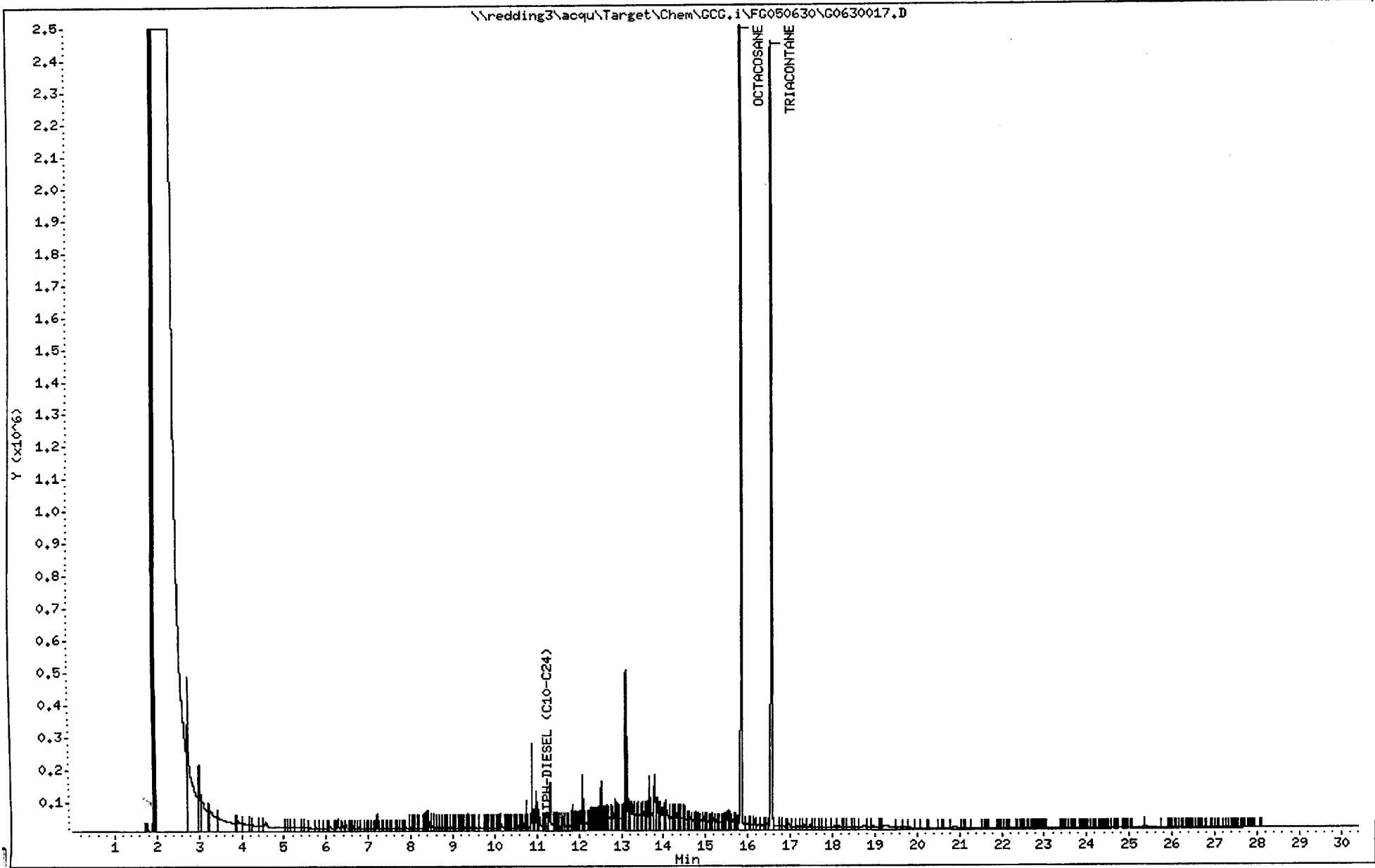
Data File: \\redding3\acq\Target\Cl
Date : 30-JUN-2005 21:20
Client ID: P13SCSB1300F
Sample Info: DF076014

Instrument: GCG.i

Operator:

Column diameter: 0.53

Column phase: RTX-5



1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT ID.

P13SCSB1305F

Lab Name: COLUMBIA ANALYTICAL SERVICES - REDDING

Case No.: DF076 SDG No.: DF076

Lab Sample ID: DF076015

Matrix: SOIL Level: LOW

Lab File ID: G0630018

Sample Wt/Vol: 49.7 G

Date Collected: 06/03/05

Extract Vol: 1 ML

Date Extracted:

% Moisture: not dec. 23

Date Analyzed: 06/30/05

Extraction Type: SONICATION

Dilution Factor: 1.0

CAS NO.	COMPOUND	Units: mg/Kg	MDL	RL	RESULT	Q
	PHCC10C24---TPH-DIESEL (C10-C24)		0.82	13	13	U

Data File: \\redding3\acqui\Target\Ch 1000 1\FG050630\G0630018.D
Date : 30-JUN-2005 22:01
Client ID: P13SCSB1305F
Sample Info: DF076015

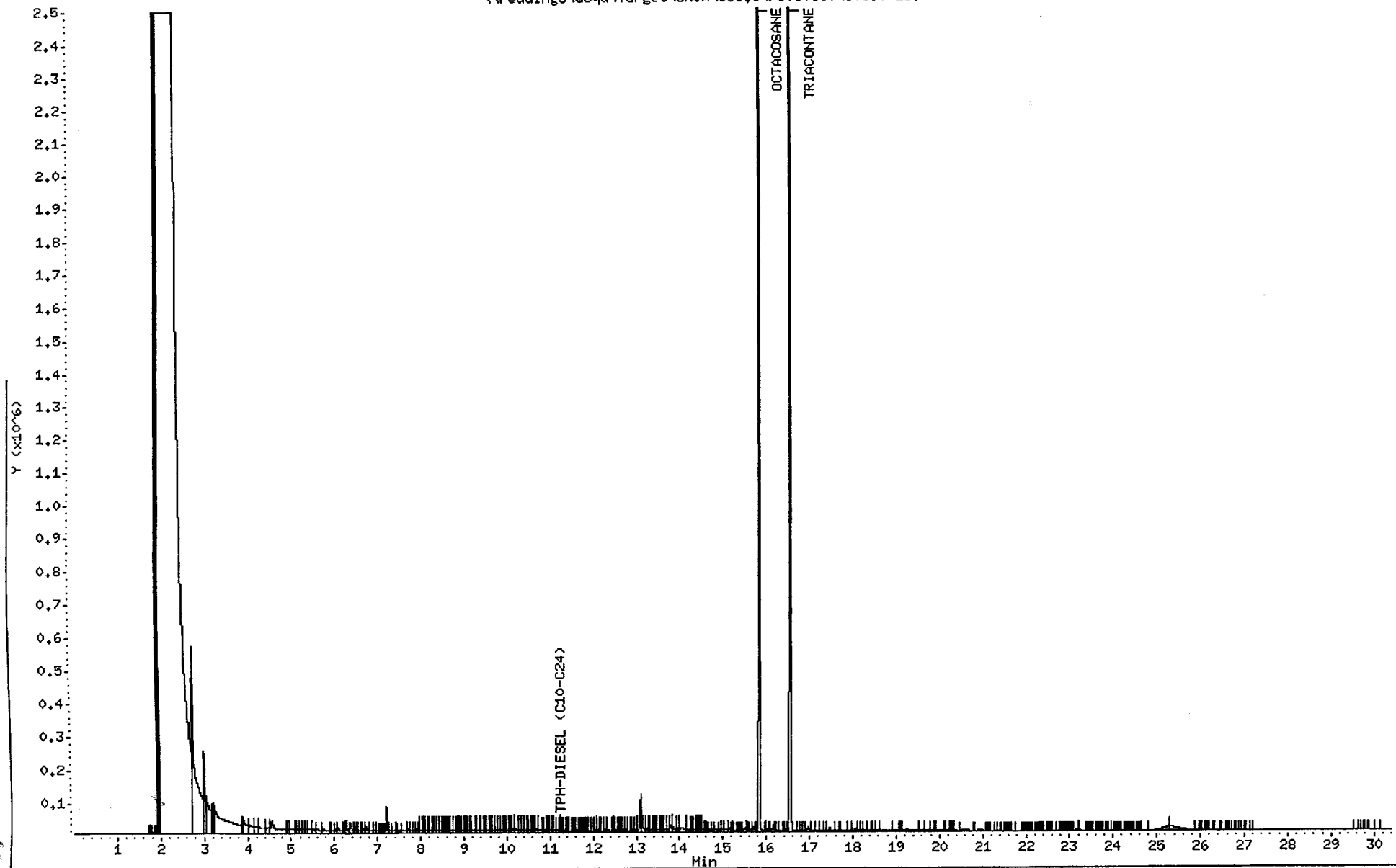
Instrument: GCG.i

Operator:

Column diameter: 0.53

Column phase: RTX-5

\\redding3\acqui\Target\Chem\GCG.i\FG050630\G0630018.D



1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT ID.

P13SCSB1310F

Lab Name: COLUMBIA ANALYTICAL SERVICES - REDDING

Case No.: DF076 SDG No.: DF076

Lab Sample ID: DF076016

Matrix: SOIL Level: LOW

Lab File ID: G0630019

Sample Wt/Vol: 50.8 G

Date Collected: 06/03/05

Extract Vol: 1 ML

Date Extracted:

% Moisture: not dec. 24

Date Analyzed: 06/30/05

Extraction Type: SONICATION

Dilution Factor: 1.0

CAS NO.	COMPOUND	Units: mg/Kg	MDL	RL	RESULT	Q
PHCC10C24---	TPH-DIESEL (C10-C24)		0.83	13	13	U

Data File: \\redding3\acqui\Target\Chem\GCC.i\FG050630\G0630019.D

Page 3

Date : 30-JUN-2005 22:40

Client ID: P13SCSB1310F

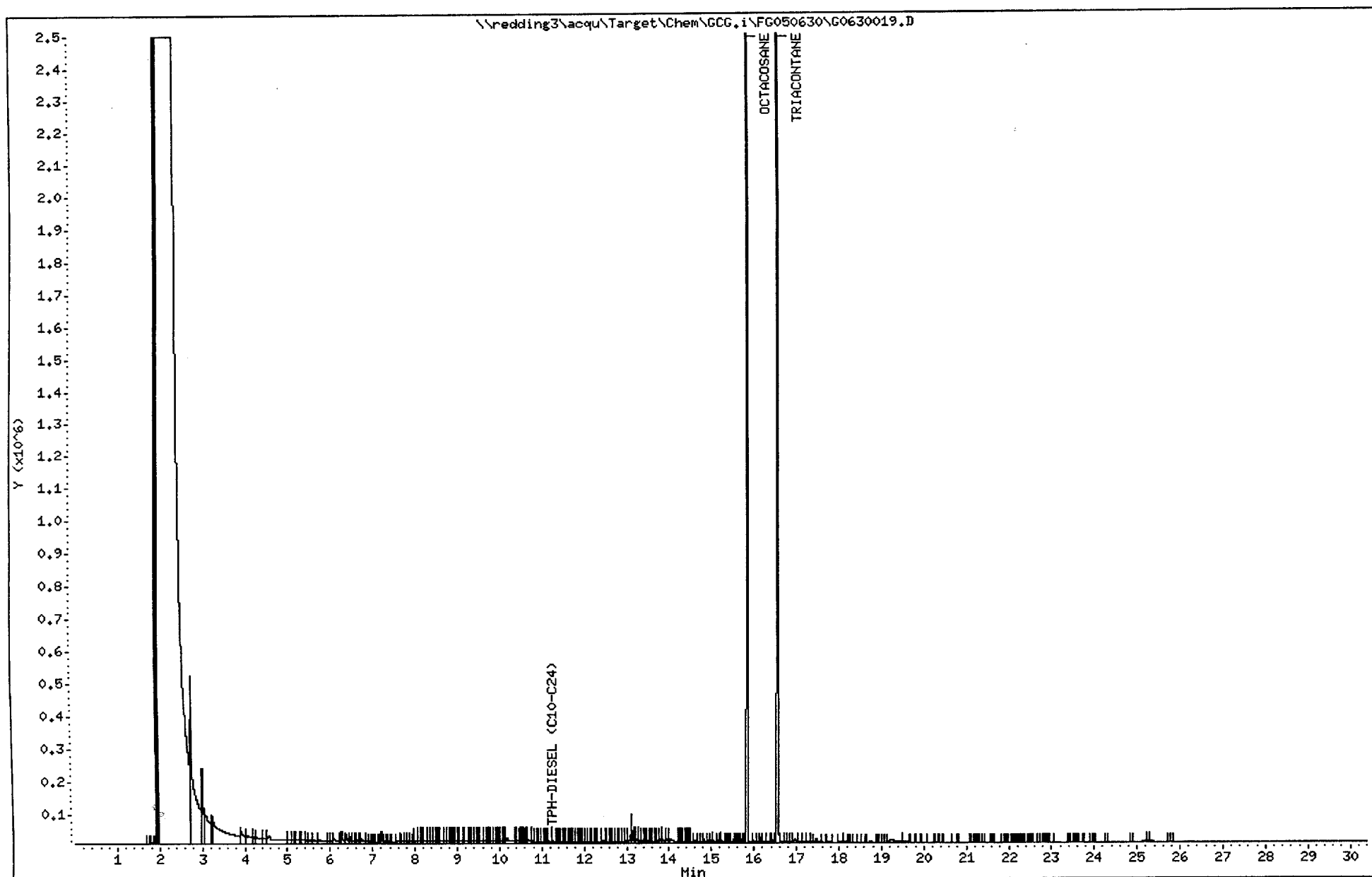
Sample Info: DF076016

Instrument: GCC.i

Operator:

Column diameter: 0.53

Column phase: RTX-5



1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT ID.

P13SCSB0800F

Lab Name: COLUMBIA ANALYTICAL SERVICES - REDDING

Case No.: DF076 SDG No.: DF076

Lab Sample ID: DF076017

Matrix: SOIL Level: LOW

Lab File ID: F0706016

Sample Wt/Vol: 50.6 G

Date Collected: 06/03/05

Extract Vol: 1 ML

Date Extracted: 06/10/05

% Moisture: not dec. 21

Date Analyzed: 07/06/05

Extraction Type: SONICATION

Dilution Factor: 2.0

CAS NO.	COMPOUND	Units: mg/Kg	MDL	RL	RESULT	Q
	PHCC10C24---TPH-DIESEL (C10-C24)		1.6	25	13	J

Date : 06-JUL-2005 21:44

Client ID: P13SCSB0800F

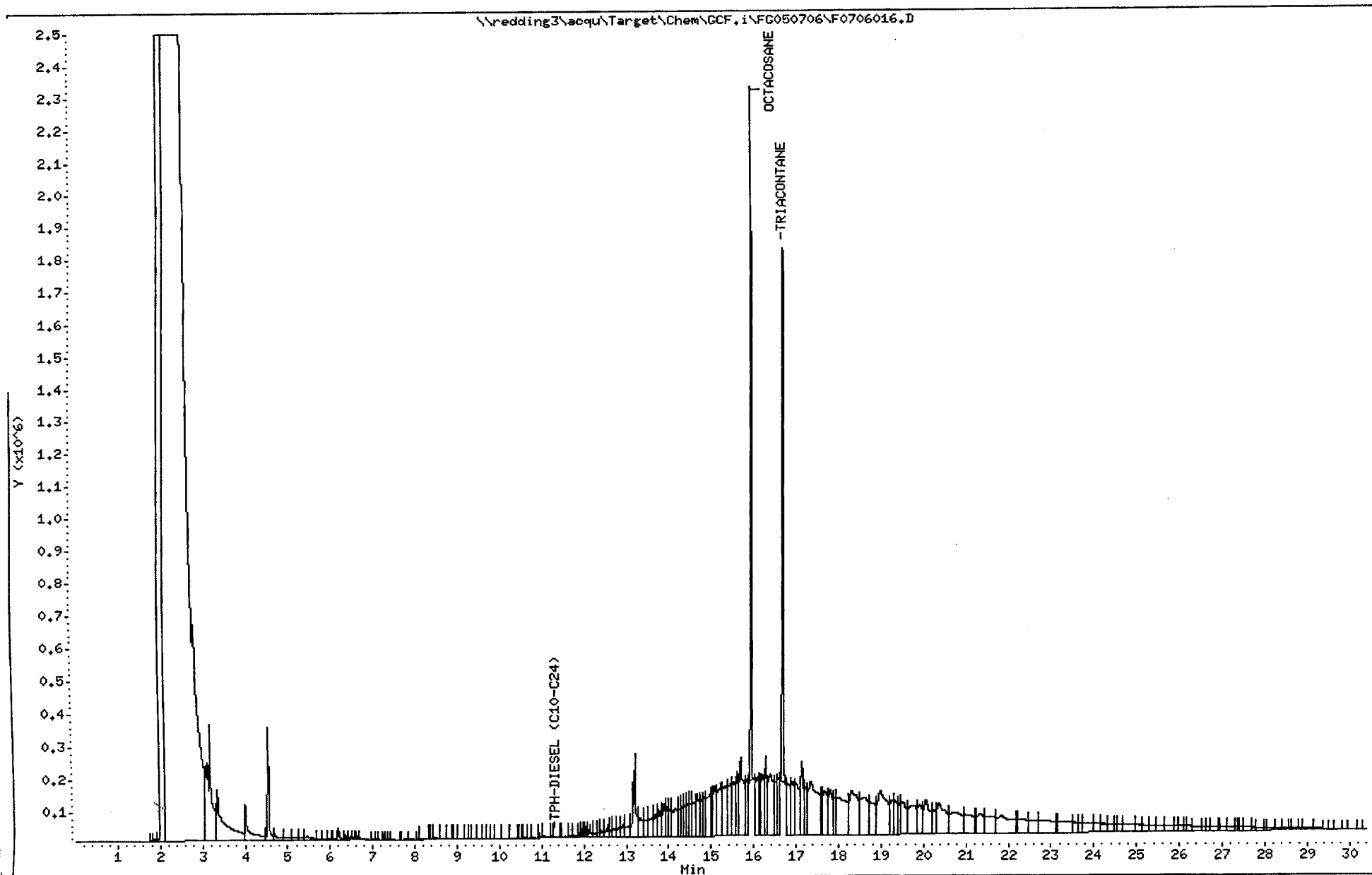
Sample Info: DF076017

Instrument: GCF.i

Operator:

Column diameter: 0.53

Column phase: RTX-5



1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT ID.

P13SCSB0802F

Lab Name: COLUMBIA ANALYTICAL SERVICES - REDDING

Case No.: DF076 SDG No.: DF076

Lab Sample ID: DF076018

Matrix: SOIL Level: LOW

Lab File ID: G0707003

Sample Wt/Vol: 50.1 G

Date Collected: 06/03/05

Extract Vol: 1 ML

Date Extracted: 06/10/05

% Moisture: not dec. 25

Date Analyzed: 07/07/05

Extraction Type: SONICATION

Dilution Factor: 2.0

CAS NO.	COMPOUND	Units: mg/Kg	MDL	RL	RESULT	Q
	PHCC10C24---TPH-DIESEL (C10-C24)		1.7	27	120	

Data File: \\redding3\acqui\Target\Chem\GCC.i\FG050707\G0707003.D

Date : 07-JUL-2005 11:21

Client ID: P13SCSB0802F

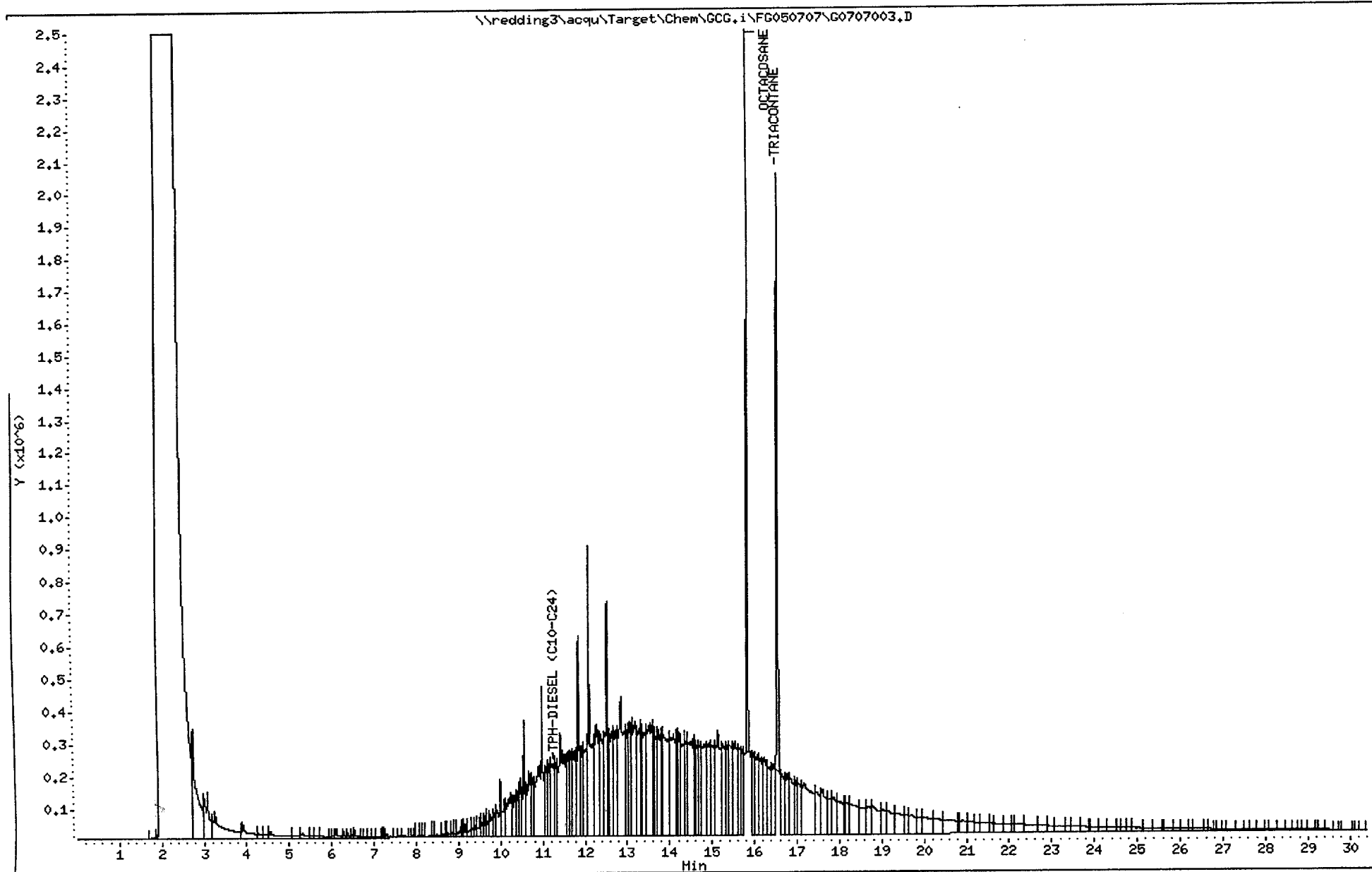
Sample Info: DF076018

Instrument: GCC.i

Operator:

Column diameter: 0.53

Column phase: RTX-5



1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT ID.

P13SCSB0805F

Lab Name: COLUMBIA ANALYTICAL SERVICES - REDDING

Case No.: DF076 SDG No.: DF076

Lab Sample ID: DF076019

Matrix: SOIL Level: LOW

Lab File ID: F0706018

Sample Wt/Vol: 50.7 G

Date Collected: 06/03/05

Extract Vol: 1 ML

Date Extracted: 06/10/05

% Moisture: not dec. 26

Date Analyzed: 07/06/05

Extraction Type: SONICATION

Dilution Factor: 5.0

CAS NO.	COMPOUND	Units: mg/Kg	MDL	RL	RESULT	Q
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PHCC10C24---TPH-DIESEL (C10-C24)	4.2	67	100	
----------------------------------	-----	----	-----	--

Data File: \\redding3\acqu\Target\Ch

Date : 06-JUL-2005 23:03

Client ID: P13SCSB0805F

Sample Info: DF076019

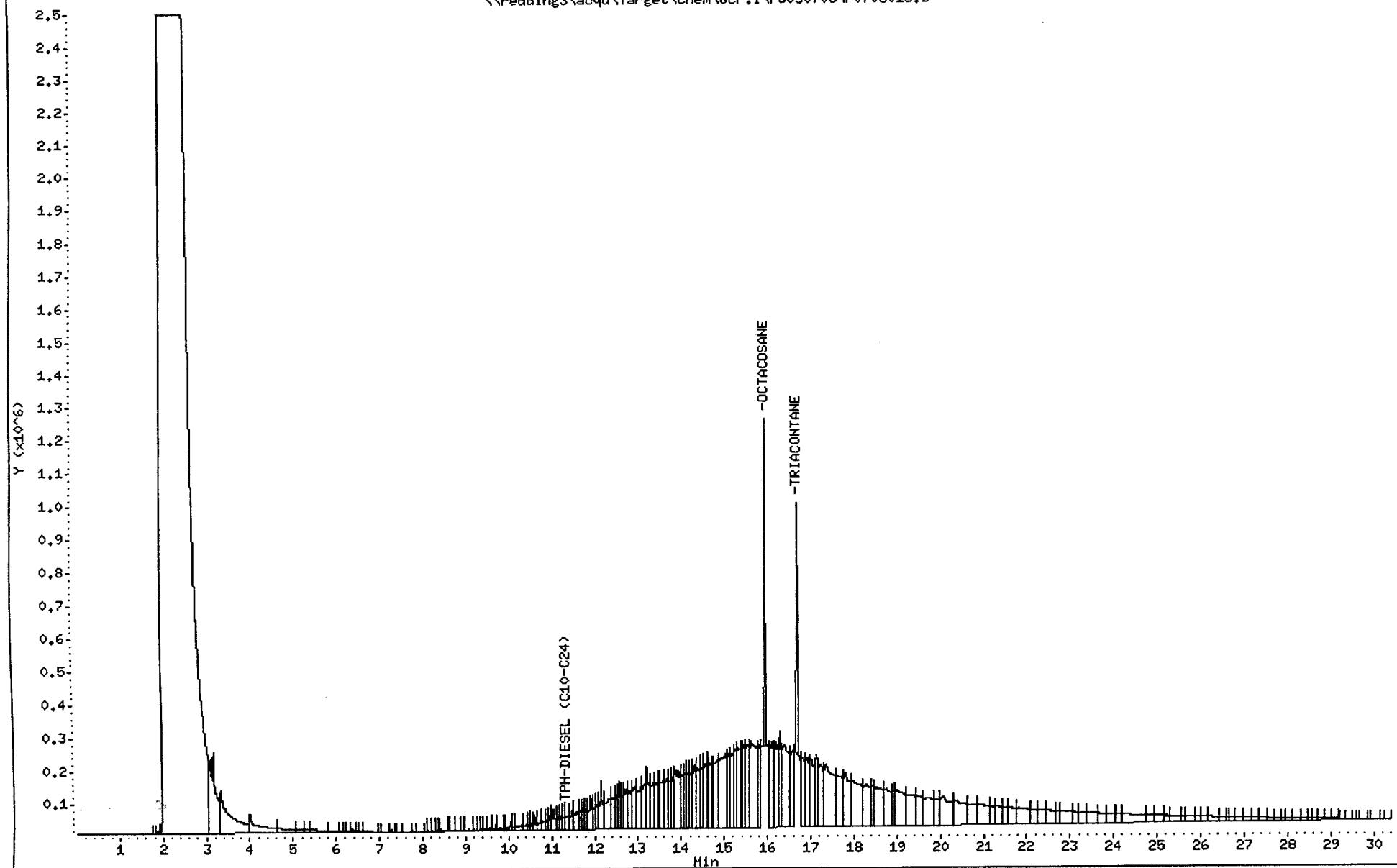
Instrument: GCF.i

Operator:

Column diameter: 0.53

Column phase: RTX-5

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1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT ID.

P13SCSB0810F

Lab Name: COLUMBIA ANALYTICAL SERVICES - REDDING

Case No.: DF076 SDG No.: DF076

Lab Sample ID: DF076020

Matrix: SOIL Level: LOW

Lab File ID: F0706010

Sample Wt/Vol: 49.6 G

Date Collected: 06/03/05

Extract Vol: 1 ML

Date Extracted: 06/10/05

% Moisture: not dec. 12

Date Analyzed: 07/06/05

Extraction Type: SONICATION

Dilution Factor: 50.0

CAS NO.	COMPOUND	Units: mg/Kg	MDL	RL	RESULT	Q
	PHCC10C24---TPH-DIESEL (C10-C24)		36	570	2500	

Data File: \\redding3\acqu\Target\Chem\GCF.i\F0706010.D

Date : 06-JUL-2005 17:45

Client ID: P13SCSB0810F

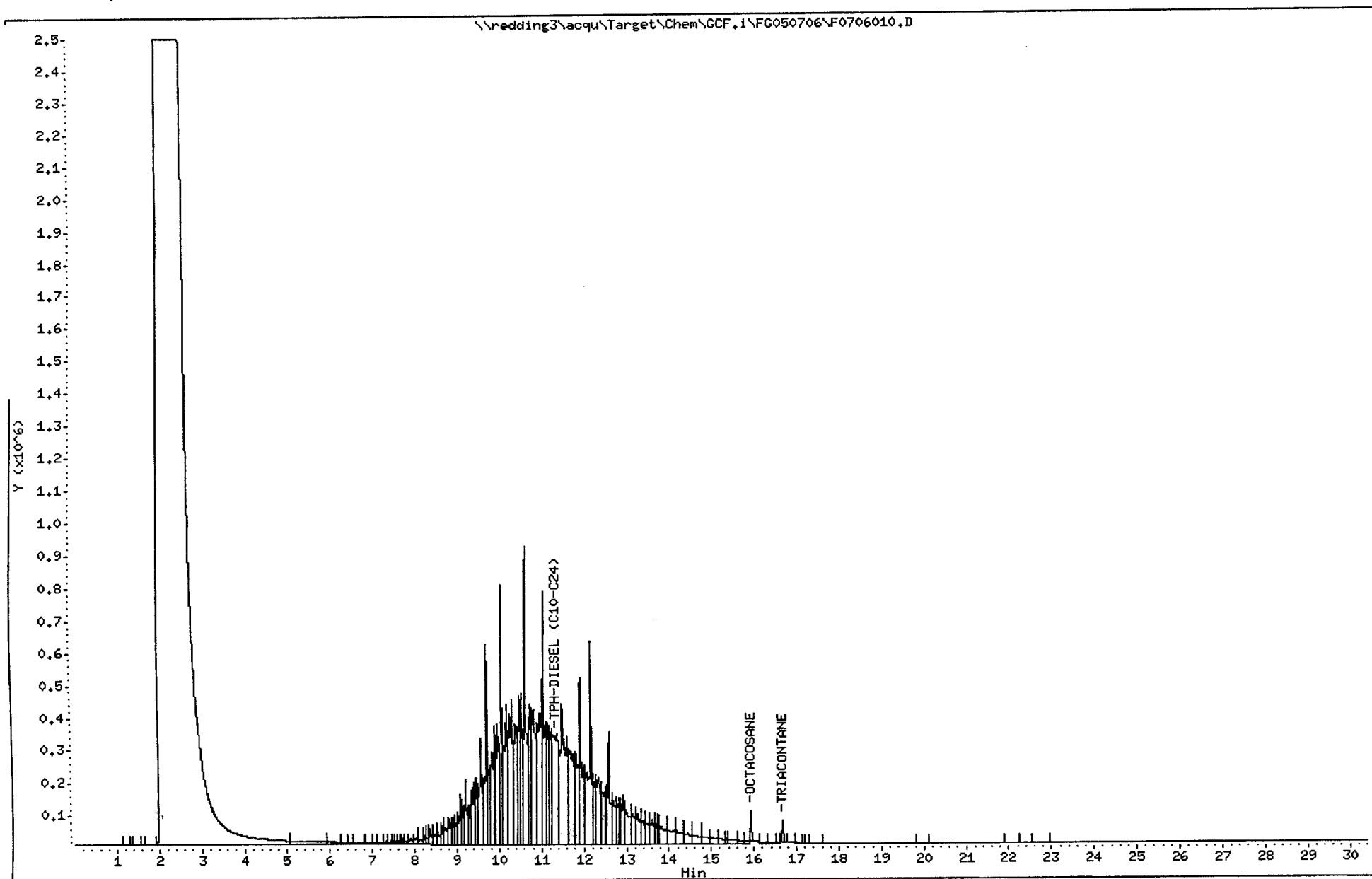
Sample Info: DF076020

Instrument: GCF.i

Operator:

Column diameter: 0,53

Column phase: RTX-5



QC Summary

Data File: \\redding3\acqu\Target\Ch

Date : 06-JUL-2005 18:25

Client ID: P13SCSB0810FMS

Sample Info: DF076020MS

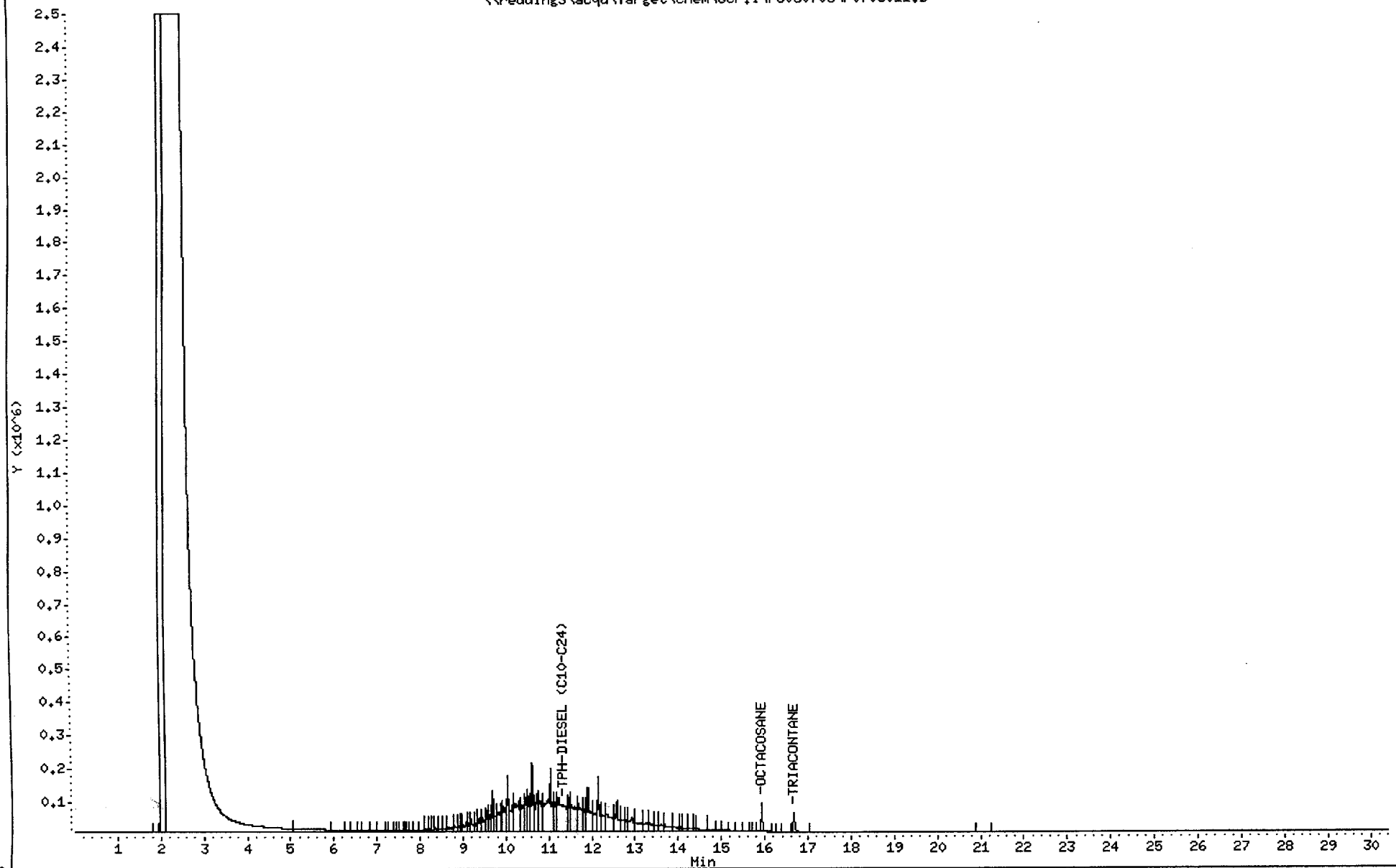
Instrument: GCF.i

Operator:

Column diameter: 0.53

Column phase: RTX-5

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Data File: \\redding3\acqu\Target\Ch...

Date : 06-JUL-2005 19:05

Client ID: P13SCSB0810FHSD

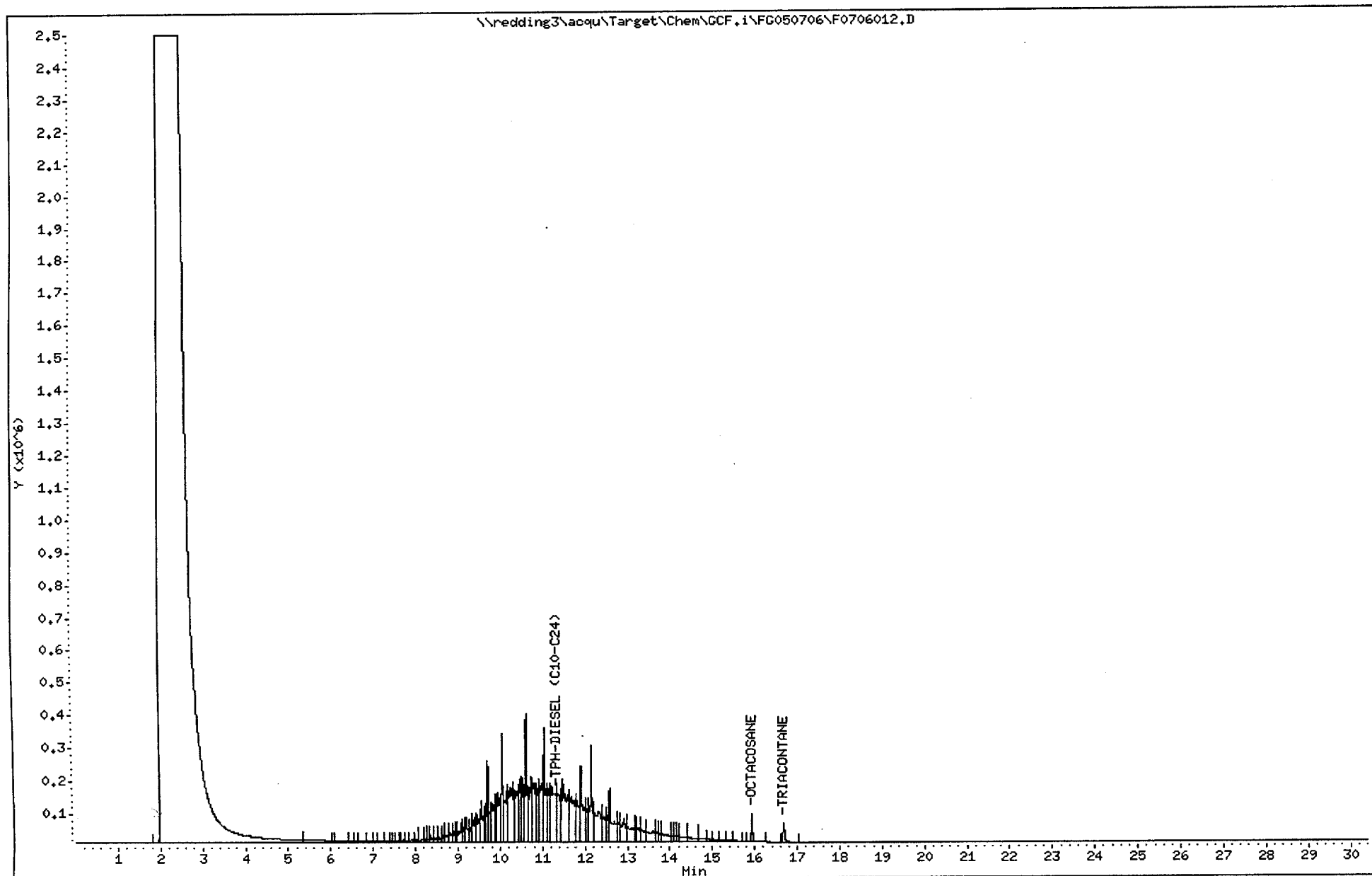
Sample Info: DF076020HSD

Instrument: GCF.i

Operator:

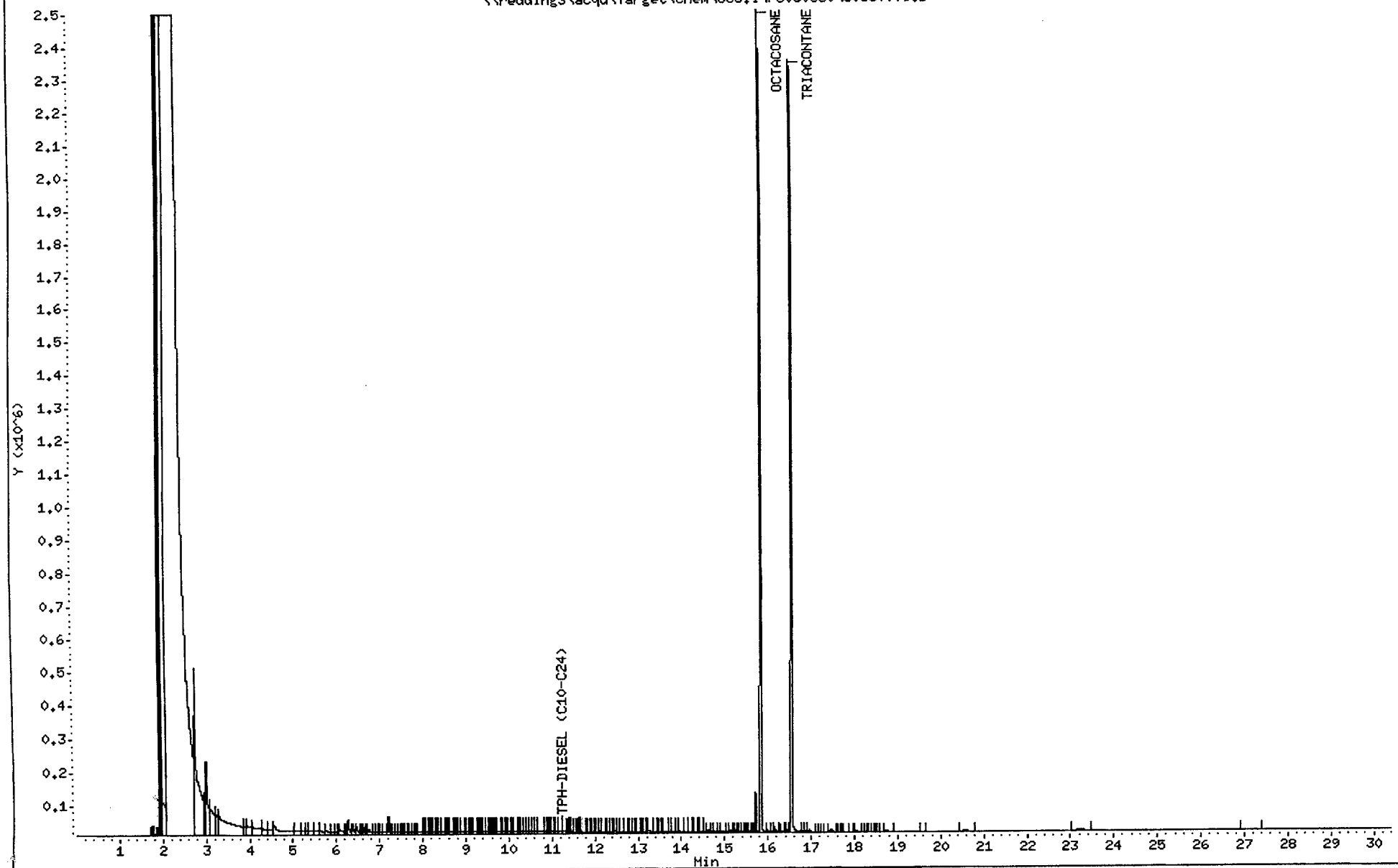
Column diameter: 0.53

Column phase: RTX-5



Column diameter: 0.53

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Data File: \\redding3\acqui\Target\Chem\GCG.i\FG050630\G0630004.D

Date : 30-JUN-2005 12:39

Client ID: DBS10610LCS

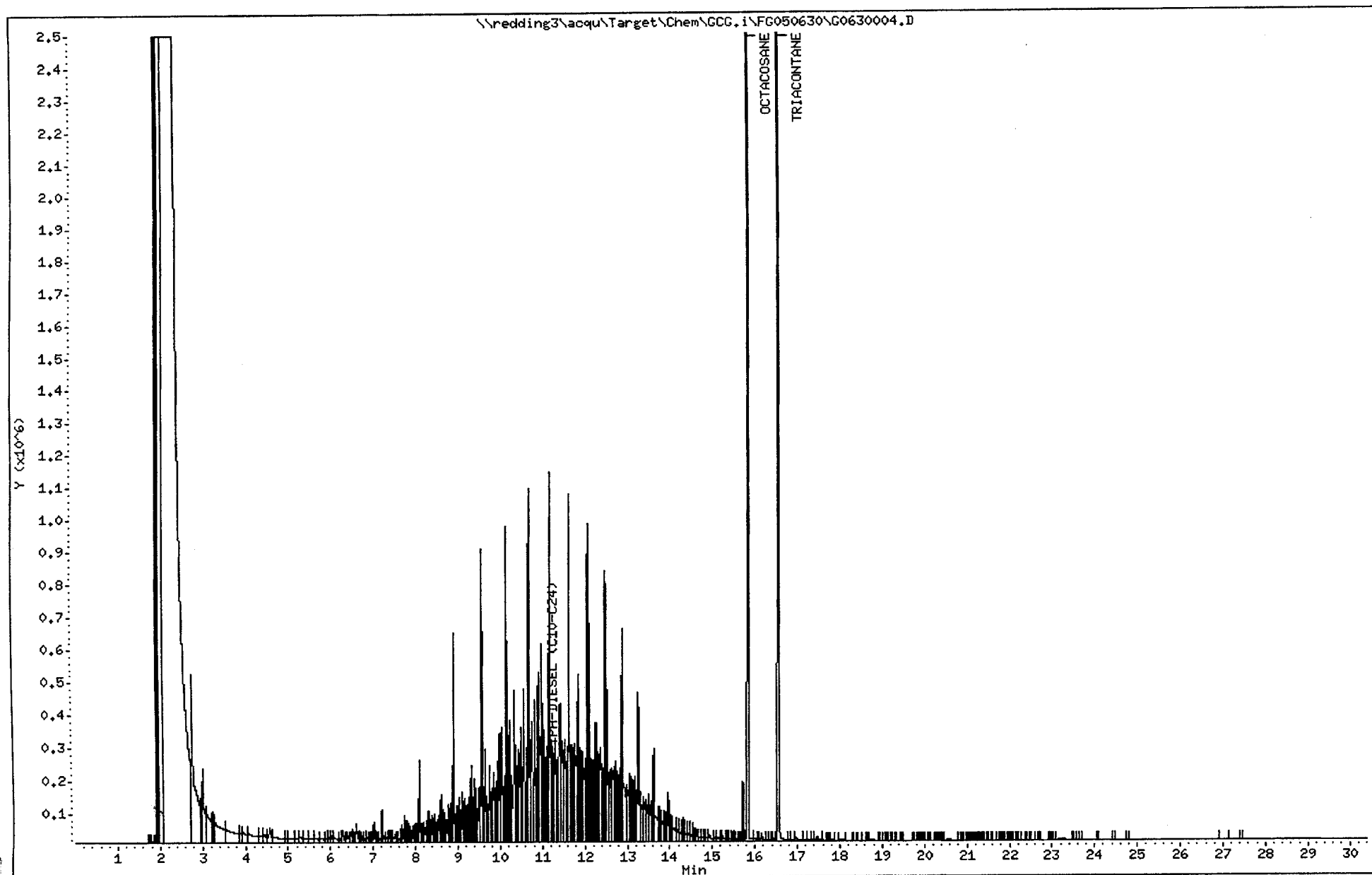
Sample Info: DBS10610LCS

Instrument: GCG.i

Operator:

Column diameter: 0.53

Column phase: RTX-5



1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT ID.

DBS10610

Lab Name: COLUMBIA ANALYTICAL SERVICES - REDDING

Case No.: DF076 SDG No.: DF076

Lab Sample ID: DBS10610

Matrix: SOIL Level: LOW

Lab File ID: G0630003

Sample Wt/Vol: 50.0 G

Date Collected:

Extract Vol: 1 ML

Date Extracted: 06/10/05

Date Analyzed: 06/30/05

Extraction Type: SONICATION

Dilution Factor: 1.0

CAS NO.	COMPOUND	Units: mg/Kg	MDL	RL	RESULT	Q
	PHCC10C24---TPH-DIESEL (C10-C24)		0.63	10	10	U

2C
SOIL SEMIVOLATILE SURROGATE RECOVERY

Lab Name: COLUMBIA ANALYTICAL SERVICES - REDDING

Case No.: DF076 SDG No.: DF076

Level: LOW

	LAB ID	CLIENT ID.	S1 (OCT) #	S2 (TRI) #	S3	TOT OUT
	=====	=====	=====	=====	=====	=====
01	DBS10610	DBS10610	60	64		0
02	DBS10610LCS	DBS10610LCS	79	82		0
03	DF076002	P13SCSB0902F	68	73		0
04	DF076003	P13SCSB0905F	66	72		0
05	DF076004	P13SCSB0910F	62	68		0
06	DF076006	P13SCSB1002F	66	72		0
07	DF076007	P13SCSB1005F	64	70		0
08	DF076008	P13SCSB1010F	62	67		0
09	DF076010	P13SCSB1102F	83	87		0
10	DF076011	P13SCSB1200F	65	71		0
11	DF076012	P13SCSB1205F	71	78		0
12	DF076013	P13SCSB1210F	62	68		0
13	DF076014	P13SCSB1300F	62	66		0
14	DF076015	P13SCSB1305F	65	71		0
15	DF076016	P13SCSB1310F	65	71		0
16	DF076020	P13SCSB0810F	91	88		0
17	DF076020MS	P13SCSB0810FMS	100	95		0
18	DF076020MSD	P13SCSB0810FMDS	106	90		0
19	DF076001	P13SCSB0900F	104	104		0
20	DF076005	P13SCSB1000F	95	89		0
21	DF076009	P13SCSB1100F	111*	109*		2
22	DF076017	P13SCSB0800F	84	83		0
23	DF076019	P13SCSB0805F	96	92		0
24	DF076018	P13SCSB0802F	92	94		0
25						
26						
27						
28						
29						
30						

QC LIMITS

S1 (OCT) = OCTACOSANE (56-110)

S2 (TRI) = TRIACONTANE (52-107)

Column to be used to flag recovery values

* Values outside of contract required QC limits

D Surrogates diluted out

3C
SOIL SEMIVOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: COLUMBIA ANALYTICAL SERVICES - REDDING

Case No.: DF076 SDG No.: DF076

Matrix Spike - Sample No.: P13SCSB0810F Level: LOW

COMPOUND	SPIKE ADDED (mg/Kg)	SAMPLE CONCENTRATION (mg/Kg)	MS CONCENTRATION (mg/Kg)	MS % REC #	QC. LIMITS REC.
TPH-DIESEL (C10-C24)	55.868	2498.0	600.66	0*	65-135

COMPOUND	SPIKE ADDED (mg/Kg)	MSD CONCENTRATION (mg/Kg)	MSD % REC #	% RPD #	QC LIMITS RPD	REC.
TPH-DIESEL (C10-C24)	57.311	1117.9	0*	0	30	65-135

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

RPD: 0 out of 1 outside limits
Spike Recovery: 2 out of 2 outside limits

3D
SOIL SEMIVOLATILE LAB CONTROL SAMPLE

Lab Name: COLUMBIA ANALYTICAL SERVICES - REDDING

Case No.: DF076 SDG No.: DF076

LCS - Sample No.: DBS10610 Level: LOW

COMPOUND	SPIKE ADDED (mg/Kg)	SAMPLE CONCENTRATION (mg/Kg)	LCS CONCENTRATION (mg/Kg)	LCS % REC #	QC. LIMITS REC.
TPH-DIESEL (C10-C24)	50.000	N/A	36.692	73	65-135

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

RPD: 0 out of 0 outside limits
Spike Recovery: 0 out of 1 outside limits

4B
SEMIVOLATILE METHOD BLANK SUMMARY

Client ID.

DBS10610

Lab Name: COLUMBIA ANALYTICAL SERVICES - REDDING

Case No.: DF076 SDG No.: DF076

Lab File ID: G0630003

Lab Sample ID: DBS10610

Date Extracted: 06/10/05

Extraction Type: SONICATION

Date Analyzed: 06/30/05

Time Analyzed: 1159

Matrix: SOIL

Level: (low/med) LOW

Instrument ID: GCG

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

	CLIENT ID.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
	=====	=====	=====	=====
01	DBS10610LCS	DBS10610LCS	G0630004	06/30/05
02	P13SCSB0902F	DF076002	G0630005	06/30/05
03	P13SCSB0905F	DF076003	G0630006	06/30/05
04	P13SCSB0910F	DF076004	G0630007	06/30/05
05	P13SCSB1002F	DF076006	G0630008	06/30/05
06	P13SCSB1005F	DF076007	G0630009	06/30/05
07	P13SCSB1010F	DF076008	G0630010	06/30/05
08	P13SCSB1102F	DF076010	G0630011	06/30/05
09	P13SCSB1200F	DF076011	G0630014	06/30/05
10	P13SCSB1205F	DF076012	G0630015	06/30/05
11	P13SCSB1210F	DF076013	G0630016	06/30/05
12	P13SCSB1300F	DF076014	G0630017	06/30/05
13	P13SCSB1305F	DF076015	G0630018	06/30/05
14	P13SCSB1310F	DF076016	G0630019	06/30/05
15	P13SCSB0810F	DF076020	F0706010	07/06/05
16	P13SCSB0810FMS	DF076020MS	F0706011	07/06/05
17	P13SCSB0810FMSD	DF076020MSD	F0706012	07/06/05
18	P13SCSB0900F	DF076001	F0706013	07/06/05
19	P13SCSB1000F	DF076005	F0706014	07/06/05
20	P13SCSB1100F	DF076009	F0706015	07/06/05
21	P13SCSB0800F	DF076017	F0706016	07/06/05
22	P13SCSB0805F	DF076019	F0706018	07/06/05
23	P13SCSB0802F	DF076018	G0707003	07/07/05

Standards data

6C
SEMIVOLATILE ORGANICS INITIAL CALIBRATION DATA
ANALYTE CONCENTRATIONS

Lab Name: COLUMBIA ANALYTICAL SERVICES - REDDING

Case No.: DF076 SDG No.: DF076

Instrument ID: GCG

ICAL Date(s): 06/29/05

Analyte Concentration:

LAB FILE ID:		RRF0.1=G0629012.D	RRF0.5=G0629013.D		
RRF1 =G0629014.D		RRF2.5=G0629015.D	RRF4 =G0629016.D		
COMPOUND	RRF0.1	RRF0.5	RRF1	RRF2.5	RRF4
TPH-DIESEL (C10-C24)	0.100	0.500	1.000	2.500	4.000
OCTACOSANE	0.100	0.150	0.250	0.300	0.350
TRIACONTANE	0.100	0.150	0.250	0.300	0.350

6C
SEMIVOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: COLUMBIA ANALYTICAL SERVICES - REDDING

Case No.: DF076 SDG No.: DF076

Instrument ID: GCG

ICAL Date(s): 06/29/05

LAB FILE ID:		RRF0.1=G0629012.D		RRF0.5=G0629013.D			
RRF1 =G0629014.D		RRF2.5=G0629015.D		RRF4 =G0629016.D			
COMPOUND	RRF0.1	RRF0.5	RRF1	RRF2.5	RRF4	\overline{RRF}	%RSD
TPH-DIESEL (C10-C24)	5213	3440	3643	3833	3628	3663	0.998
OCTACOSANE	2658	2737	2990	3962	3733	3216	18.5
TRIACONTANE	2591	2734	2973	3812	3414	3105	16.2

RF's divided by 10000

'&' denotes LINEAR FIT. %RSD value is correlation of determination (r^2).

6C
SEMIVOLATILE ORGANICS INITIAL CALIBRATION DATA
ANALYTE CONCENTRATIONS

Lab Name: COLUMBIA ANALYTICAL SERVICES - REDDING

Case No.: DF076 SDG No.: DF076

Instrument ID: GCF

ICAL Date(s): 07/06/05

Analyte Concentration:

LAB FILE ID:		RRF0.1=F0706003.D		RRF0.5=F0706004.D	
RRF1 =F0706005.D		RRF2.5=F0706006.D		RRF4 =F0706007.D	
COMPOUND	RRF0.1	RRF0.5	RRF1	RRF2.5	RRF4
TPH-DIESEL (C10-C24)	0.100	0.500	1.000	2.500	4.000
OCTACOSANE	0.100	0.150	0.250	0.300	0.350
TRIACONTANE	0.100	0.150	0.250	0.300	0.350

6C
SEMIVOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: COLUMBIA ANALYTICAL SERVICES - REDDING

Case No.: DF076 SDG No.: DF076

Instrument ID: GCF

ICAL Date(s): 07/06/05

LAB FILE ID:		RRF0.1=F0706003.D		RRF0.5=F0706004.D				
RRF1 =F0706005.D		RRF2.5=F0706006.D		RRF4 =F0706007.D				
COMPOUND		RRF0.1	RRF0.5	RRF1	RRF2.5	RRF4	$\overline{\text{RRF}}$	%RSD
=====		=====	=====	=====	=====	=====	=====	=====
TPH-DIESEL (C10-C24)		3490	2999	3054	3051	3072	3133	6.4
=====		=====	=====	=====	=====	=====	=====	=====
OCTACOSANE		3025	3175	3074	3284	3157	3143	3.2
TRIACONTANE		3090	3225	3118	3333	3202	3193	3.0

RF's divided by 10000

6C
SEMIVOLATILE ORGANICS INITIAL CALIBRATION DATA
ANALYTE CONCENTRATIONS

Lab Name: COLUMBIA ANALYTICAL SERVICES - REDDING

Case No.: DF076 SDG No.: DF076

Instrument ID: GCG

ICAL Date(s): 07/06/05

Analyte Concentration:

LAB FILE ID:		RRF0.1=G0706003.D	RRF0.5=G0706004.D		
RRF1 =G0706005.D		RRF2.5=G0706006.D	RRF4 =G0706007.D		
COMPOUND	RRF0.1	RRF0.5	RRF1	RRF2.5	RRF4
TPH-DIESEL (C10-C24)	0.100	0.500	1.000	2.500	4.000
OCTACOSANE	0.100	0.150	0.250	0.300	0.350
TRIACONTANE	0.100	0.150	0.250	0.300	0.350

6C
SEMIVOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: COLUMBIA ANALYTICAL SERVICES - REDDING

Case No.: DF076 SDG No.: DF076

Instrument ID: GCG

ICAL Date(s): 07/06/05

LAB FILE ID:		RRF0.1=G0706003.D			RRF0.5=G0706004.D		
RRF1 =G0706005.D		RRF2.5=G0706006.D			RRF4 =G0706007.D		
COMPOUND	RRF0.1	RRF0.5	RRF1	RRF2.5	RRF4	RRF	%RSD
TPH-DIESEL (C10-C24)	4070	3024	3384	2977	3422	3375	13.0
OCTACOSANE	2594	2680	3037	3267	3716	3059	14.9
TRIACONTANE	2702	2815	3098	3189	3661	3093	12.1

RF's divided by 10000

7B
SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: COLUMBIA ANALYTICAL SERVICES - REDDING

Instrument ID: GCG	Case No.: DF076	SDG No.: DF076
Lab File ID: G0629017	CCV Date/Time:	06/29/05 2039
	ICAL Date/Time (1st pt):	06/29/05 1718
	ICAL Date/Time (Last pt):	06/29/05 1958

COMPOUND	SAMPLE AMOUNT	CAL0.5 AMOUNT	CURVE	%D	MAX %Dft
=====	=====	=====	=====	=====	=====
TPH-DIESEL (C10-C24)	0.48536	0.50000	LINR	-2.9	15.0
=====	=====	=====	=====	=====	=====
OCTACOSANE	0.13224	0.15000	AVG	-11.8	15.0
TRIACONTANE	0.13732	0.15000	AVG	-8.4	15.0
=====	=====	=====	=====	=====	=====

FORM VII SV-1

7B
SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: COLUMBIA ANALYTICAL SERVICES - REDDING

Instrument ID: GCG Case No.: DF076 SDG No.: DF076

Lab File ID: G0630002 CCV Date/Time: 06/30/05 1119

ICAL Date/Time (1st pt): 06/29/05 1718

ICAL Date/Time (Last pt): 06/29/05 1958

COMPOUND	SAMPLE AMOUNT	CAL1 AMOUNT	CURVE	%D	MAX %Dft
=====	=====	=====	=====	=====	=====
TPH-DIESEL (C10-C24)	1.0003	1.0000	LINR	0.0	15.0
=====	=====	=====	=====	=====	=====
OCTACOSANE	0.24265	0.25000	AVG	-2.9	15.0
TRIACONTANE	0.24696	0.25000	AVG	-1.2	15.0
=====	=====	=====	=====	=====	=====

FORM VII SV-1

7B
SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: COLUMBIA ANALYTICAL SERVICES - REDDING

Instrument ID: GCG	Case No.: DF076	SDG No.: DF076
Lab File ID: G0630013	CCV Date/Time:	06/30/05 1840
	ICAL Date/Time (1st pt):	06/29/05 1718
	ICAL Date/Time (Last pt):	06/29/05 1958

COMPOUND	SAMPLE AMOUNT	CAL2.5 AMOUNT	CURVE	%D	MAX %Dft
=====	=====	=====	=====	=====	=====
TPH-DIESEL (C10-C24)	2.8415	2.5000	LINR	13.6	15.0
=====	=====	=====	=====	=====	=====
OCTACOSANE	0.41057	0.30000	AVG	36.8	15.0 <-
TRIACONTANE	0.41179	0.30000	AVG	37.3	15.0 <-
=====	=====	=====	=====	=====	=====

FORM VII SV-1

7B
SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: COLUMBIA ANALYTICAL SERVICES - REDDING

Instrument ID: GCG	Case No.: DF076	SDG No.: DF076
Lab File ID: G0630024	CCV Date/Time:	07/01/05 0159
	ICAL Date/Time (1st pt):	06/29/05 1718
	ICAL Date/Time (Last pt):	06/29/05 1958

COMPOUND	SAMPLE AMOUNT	CAL1 AMOUNT	CURVE	%D	MAX %Dft
TPH-DIESEL (C10-C24)	1.0272	1.0000	LINR	2.7	15.0
OCTACOSANE	0.24462	0.25000	AVG	-2.2	15.0
TRIACONTANE	0.25740	0.25000	AVG	3.0	15.0

FORM VII SV-1

7B
SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: COLUMBIA ANALYTICAL SERVICES - REDDING

Instrument ID: GCF	Case No.: DF076	SDG No.: DF076
Lab File ID: F0706008	CCV Date/Time:	07/06/05 1625
	ICAL Date/Time (1st pt):	07/06/05 1301
	ICAL Date/Time (Last pt):	07/06/05 1541

COMPOUND	\overline{RRF}	RRF1	CURVE TYPE	%D	MAX %D
=====	=====	=====	=====	=====	=====
TPH-DIESEL (C10-C24)	3133	3136	AVG	0.1	15.0
=====	=====	=====	=====	=====	=====
OCTACOSANE	3143	3309	AVG	5.3	15.0
TRIACONTANE	3193	3360	AVG	5.2	15.0

RF's divided by 10000

7B
SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: COLUMBIA ANALYTICAL SERVICES - REDDING

Instrument ID: GCG	Case No.: DF076	SDG No.: DF076
Lab File ID: G0706008	CCV Date/Time:	07/06/05 1625
	ICAL Date/Time (1st pt):	07/06/05 1301
	ICAL Date/Time (Last pt):	07/06/05 1541

COMPOUND	<u>RRF</u>	RRF1	CURVE TYPE	%D	MAX %D
=====	=====	=====	=====	=====	=====
TPH-DIESEL (C10-C24)	3375	3127	AVG	-7.4	15.0
=====	=====	=====	=====	=====	=====
OCTACOSANE	3059	2906	AVG	-5.0	15.0
TRIACONTANE	3093	3011	AVG	-2.7	15.0

RF's divided by 10000

7B
SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: COLUMBIA ANALYTICAL SERVICES - REDDING

Instrument ID: GCF	Case No.: DF076	SDG No.: DF076
Lab File ID: F0706020	CCV Date/Time:	07/07/05 0022
	ICAL Date/Time (1st pt):	07/06/05 1301
	ICAL Date/Time (Last pt):	07/06/05 1541

COMPOUND	\overline{RRF}	RRF1	CURVE TYPE	%D	MAX %D
TPH-DIESEL (C10-C24)	3133	2994	AVG	-4.4	15.0
OCTACOSANE	3143	3197	AVG	1.7	15.0
TRIACONTANE	3193	3280	AVG	2.7	15.0

RF's divided by 10000

7B
SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: COLUMBIA ANALYTICAL SERVICES - REDDING

Instrument ID: GCG Case No.: DF076 SDG No.: DF076

Lab File ID: G0707002 CCV Date/Time: 07/07/05 1041

ICAL Date/Time (1st pt): 07/06/05 1301

ICAL Date/Time (Last pt): 07/06/05 1541

COMPOUND	\overline{RRF}	RRF1	CURVE TYPE	%D	MAX %D
TPH-DIESEL (C10-C24)	3375	3036	AVG	-10.0	15.0
OCTACOSANE	3059	2751	AVG	-10.0	15.0
TRIACONTANE	3093	2852	AVG	-7.8	15.0

RF's divided by 10000

7B
SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: COLUMBIA ANALYTICAL SERVICES - REDDING

Instrument ID: GCG	Case No.: DF076	SDG No.: DF076
Lab File ID: G0707010	CCV Date/Time:	07/07/05 1600
	ICAL Date/Time (1st pt):	07/06/05 1301
	ICAL Date/Time (Last pt):	07/06/05 1541

COMPOUND	RRF	RRF2.5	CURVE TYPE	%D	MAX %D
TPH-DIESEL (C10-C24)	3375	3025	AVG	-10.4	15.0
OCTACOSANE	3059	3351	AVG	9.6	15.0
TRIACONTANE	3093	3279	AVG	6.0	15.0

RF's divided by 10000

8D
SEMIVOLATILE ANALYTICAL SEQUENCE

Lab Name: COLUMBIA ANALYTICAL SERVICES - REDDING

Case No.: DF076 SDG No.: DF076

GC Column: RTX-5 ID: 0.53 (mm) ICAL Date(s): 06/29/05 06/29/05

Instrument ID: GCG

	CLIENT SAMPLE ID	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED
	=====	=====	=====	=====
01	DSTD1	DSTD1	06/29/05	1718
02	DSTD2	DSTD2	06/29/05	1758
03	DSTD3	DSTD3	06/29/05	1838
04	DSTD4	DSTD4	06/29/05	1918
05	DSTD5	DSTD5	06/29/05	1958
06	QCALSTD2	QCALSTD2	06/29/05	2039
07	DSTD3	DSTD3	06/30/05	1119
08	DBS10610	DBS10610	06/30/05	1159
09	DBS10610LCS	DBS10610LCS	06/30/05	1239
10	P13SCSB0902F	DF076002	06/30/05	1319
11	P13SCSB0905F	DF076003	06/30/05	1359
12	P13SCSB0910F	DF076004	06/30/05	1439
13	P13SCSB1002F	DF076006	06/30/05	1519
14	P13SCSB1005F	DF076007	06/30/05	1559
15	P13SCSB1010F	DF076008	06/30/05	1639
16	P13SCSB1102F	DF076010	06/30/05	1719
17	DSTD4	DSTD4	06/30/05	1840
18	P13SCSB1200F	DF076011	06/30/05	1919
19	P13SCSB1205F	DF076012	06/30/05	2000
20	P13SCSB1210F	DF076013	06/30/05	2040
21	P13SCSB1300F	DF076014	06/30/05	2120
22	P13SCSB1305F	DF076015	06/30/05	2201
23	P13SCSB1310F	DF076016	06/30/05	2240
24	DSTD3	DSTD3	07/01/05	0159
25				
26				
27				
28				
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30				
31				
32				

8D
SEMIVOLATILE ANALYTICAL SEQUENCE

Lab Name: COLUMBIA ANALYTICAL SERVICES - REDDING

Case No.: DF076 SDG No.: DF076

GC Column: RTX-5 ID: 0.53 (mm) ICAL Date(s): 07/06/05 07/06/05

Instrument ID: GCF

	CLIENT SAMPLE ID	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED
	=====	=====	=====	=====
01	DSTD1	DSTD1	07/06/05	1301
02	DSTD2	DSTD2	07/06/05	1341
03	DSTD3	DSTD3	07/06/05	1421
04	DSTD4	DSTD4	07/06/05	1501
05	DSTD5	DSTD5	07/06/05	1541
06	QCALSTD	QCALSTD	07/06/05	1625
07	P13SCSB0810F	DF076020	07/06/05	1745
08	P13SCSB0810FMS	DF076020MS	07/06/05	1825
09	P13SCSB0810FMSD	DF076020MSD	07/06/05	1905
10	P13SCSB0900F	DF076001	07/06/05	1945
11	P13SCSB1000F	DF076005	07/06/05	2025
12	P13SCSB1100F	DF076009	07/06/05	2105
13	P13SCSB0800F	DF076017	07/06/05	2144
14	P13SCSB0805F	DF076019	07/06/05	2303
15	DSTD3	DSTD3	07/07/05	0022
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8D
SEMIVOLATILE ANALYTICAL SEQUENCE

Lab Name: COLUMBIA ANALYTICAL SERVICES - REDDING

Case No.: DF076 SDG No.: DF076

GC Column: RTX-5 ID: 0.53 (mm) ICAL Date(s): 07/06/05 07/06/05

Instrument ID: GCG

	CLIENT SAMPLE ID	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED
	=====	=====	=====	=====
01	DSTD1	DSTD1	07/06/05	1301
02	DSTD2	DSTD2	07/06/05	1341
03	DSTD3	DSTD3	07/06/05	1421
04	DSTD4	DSTD4	07/06/05	1501
05	DSTD5	DSTD5	07/06/05	1541
06	QCALTSTD	QCALTSTD	07/06/05	1625
07	DSTD3	DSTD3	07/07/05	1041
08	P13SCSB0802F	DF076018	07/07/05	1121
09	DSTD4	DSTD4	07/07/05	1600
10				
11				
12				
13				
14				
15				
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AMENDMENT REPORT

Client: MACTEC INC.
Project: MACTEC/CAMP PARKS

Date: 8/9/2005
Batch: DF077
Tier: 3
Dept: CL SERV

E-Data: NOT REQUIRED
Initiated By: Douglas Burnett
Completed By: Douglas Burnett
Approved By: Douglas Burnett

A handwritten signature in black ink, appearing to be 'Douglas Burnett', is written over the 'Approved By' text.

REASON: Client Request

1. Amend case narrative to include comment about soil samples received in plastic sleeves rather than glass or metal
2. Amend case narrative to include comment on why Silica Gel cleanup was not performed.
3. Supply Chromatograms

COLUMBIA ANALYTICAL SERVICES, INC.

Client: MACTEC
Project: Camp Parks
Sample Matrix: Soil/Water

Service Request No.: DF077
Date Received: 6/4/05

CASE NARRATIVE

All analyses were performed consistent with the quality assurance program of Columbia Analytical Services, Inc. (CAS). This report contains analytical results for samples designated for Tier III validation deliverables.

Sample Receipt

One water sample and five soil samples were received for analysis at Columbia Analytical Services on 6/4/05. The following discrepancy was noted upon initial sample inspection:

- Soil samples were received in plastic sleeves rather than glass or metal. Per instruction from the project manager on 6/6/05, proceed with analysis.

The samples were received in good condition and otherwise consistent with the accompanying chain of custody form. The samples were stored in a refrigerator at 4°C upon receipt at the laboratory.

Diesel Range Organics by EPA Method 8015B

Continuing Calibration Verification Exceptions:

The lower control criterion was exceeded for the following analytes in Continuing Calibration Verification (CCV) G062014 (6/22/05 02:47): Octacosane. The surrogate recoveries in all of the field samples as well as the blank and LCS analyzed in this sequence met acceptance criteria. Therefore, the data quality is not affected. No further corrective action was required.

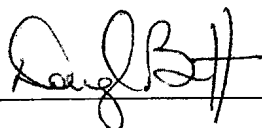
Elevated Method Reporting Limits:

Sample P13SCSB1105F required dilution due to the presence of elevated levels of Diesel Range Organics. The reporting limits are adjusted to reflect the dilution.

General Discussion and Notes:

Silica gel cleanup was not performed during preparation of these samples as requested in the QAPP. Samples were received into the laboratory on 6/4/05, prepared on 6/14/05; QAPP was received by CAS on 6/14/05.

Approved by: _____



Date: _____

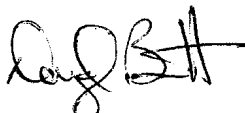
8-5-05

David Browne
MACTEC Inc.
5341 Old Redwood Highway
Suite 300
Petaluma, CA 94954

Columbia Analytical Services Report
Camp Parks Dublin
DF050077/DF077
37868

July 12, 2005

Submitted by:



Douglas Burnett
Project Manager/Client Services

The test results provided in this data package meet the requirements of the NELAC Standards unless noted in the case narrative report.

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CAS Lab Reference No.: DF077

Level III

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Current CAS Redding Accreditation Programs

Federal and National Programs

- U.S Air Force, Air Force Center for Environmental Excellence (AFCEE)
Approved laboratory for Wastewater and Hazardous Waste
- U.S. Army Corps of Engineers – MRD, HTRW Mandatory Center of Expertise
Validated for Wastewater and Hazardous Waste
- Department of the Navy, Naval Facilities Engineering Service Center (NFESC)
Approved laboratory for Wastewater and Hazardous Waste

State and Local Programs

- State of Arizona, Department of Health Services
Approved laboratory for Hazardous Waste
Lab ID# AZ0604
- State of Arkansas, Department of Environmental Quality
Approved laboratory for Wastewater and Hazardous Waste
Lab ID# None
- State of California, Department of Health Services, National Environmental Laboratory Accreditation Program (NELAP)
Approved laboratory for Drinking Water, Wastewater and Hazardous Waste
Lab ID# 01105CA
 - Los Angeles County Sanitation District
Approved laboratory for Wastewater
Lab ID# 10243
- State of Florida, Department of Health (NELAP)
Approved Environmental Testing Laboratory for Wastewater and Hazardous Waste
Lab ID# E87203
- State of Kansas, Department of Health and Environment (NELAP)
Approved laboratory for Hazardous Waste
Lab ID# E-10323
- State of Massachusetts, Department of Environmental Protection
Approved laboratory for Drinking Water, Wastewater
Lab ID# M-CA025
- State of Oklahoma, Department of Environmental Quality
Approved laboratory for General Water Quality/Sludge Testing
Lab ID# 9952
- State of Oregon, Department of Human Resources, Health Division (ORELAP)
Approved laboratory for Drinking Water, Wastewater, and Hazardous Waste
Lab ID# CA200004
- State of Utah, Department of Health, Division of Laboratory Services (NELAP)
Approved laboratory for Wastewater and Hazardous Waste
Lab ID# QUAL1
- State of Washington, Department of Ecology, Environmental Laboratory Accreditation Program
Approved laboratory for Wastewater and Hazardous Waste
Lab ID# C037
- State of Wisconsin, Department of Ecology
Approved laboratory for Wastewater and Hazardous Waste
Lab ID# 999767340

Organic Data Qualifiers

- A -- This qualifier indicates that a TIC is a suspected aldol-condensation product
- B -- This flag is used when the analyte is found in the associated blank as well as the sample. This notation indicates possible blank contamination and suggests that the data user evaluate these compounds and their amounts carefully.
- C -- The "C" flag indicates the presence of this compound has been confirmed by the GC/MS analysis.
- D -- This qualifier is used for all the compounds identified in an analysis at a secondary dilution factor. "D" qualifiers are used only for the samples reported at more than one dilution factor.
- E -- This flag indicates that the value reported exceeds the linear calibration range for that compound. Therefore, the sample should be reanalyzed at the appropriate dilution. The "E" qualified amount is an estimated concentration, and the results of the dilution will be reported on a separate Form I.
- I -- The qualifier indicates that the reporting limit to the "I" qualifier has been raised. It is used when the chromatographic interference prohibits detection of a compound at a level below the concentration expressed on the Form I.
- J -- Indicates an estimated value. It is used when the data indicates the presence of a target compound below the reporting limit or the presence of a Tentatively Identified Compound (TIC).
- N -- This qualifier indicates presumptive evidence of a compound. This flag is only used for Tentatively Identified Compounds (TIC), where the identification is based on a mass spectral library research. It is applied to all TIC results. For generic characterization of a TIC, such as chlorinated hydrocarbon, the "N" qualifier is not used.
- P -- This qualifier is used for target analytes when there is a greater than 40% difference for detected concentrations between the two columns or detectors. The concentration value is reported on Form I and flagged with a "P".
- U -- Indicates the compound was analyzed for but not detected. The number adjacent to the "U" qualifier indicates the reporting limit for that compound. The reporting limit can vary from sample to sample depending on dilution factors or percent moisture adjustments when indicated.

Organic Sample ID Qualifiers

The qualifiers that may be appended to the Lab Sample ID and/or the Client Sample ID for organic analysis are defined below:

- DL -- Diluted reanalysis. Indicates that the results were determined in an analysis of a secondary dilution of a sample or extract. A digit to indicate multiple dilutions of the sample or extract may follow the "DL" suffix. The results of more than one diluted reanalysis may be reported.
- MS -- Matrix spike (may be followed by a digit to indicate multiple matrix spikes within a sample set).
- MSD -- Matrix spike duplicate (may be followed by a digit to indicate multiple matrix spikes within a sample set).
- R -- Reanalysis. The extract was reanalyzed without re-extraction. The "R" is not used if the sample was also re-extracted. May be followed by a digit to indicate multiple reanalysis of the sample at the same dilution.
- RE -- Re-extraction analysis. The sample was re-extracted and reanalyzed. May be followed by a digit to indicate multiple re-extracted analysis of the same sample at the same dilution.

Sample ID Cross-reference Table

CAS Lab Sample ID	Client Sample ID	Receive Date	Collect Date	Sample Matrix	Additional Description
FS = Field Sample; MS = Matrix Spike; MSD = Matrix Spike Duplicate; NON = Non-Sample Type (Internal Admin)					
DF077001	FS	P13SCSB1105F	06/04/05	06/03/05 14:45	Soil
DF077002	FS	P13SCSB1110F	06/04/05	06/03/05 14:50	Soil
DF077003	FS	P13SCSB0700F	06/04/05	06/03/05 15:00	Soil
DF077004	FS	P13SCSB0705F	06/04/05	06/03/05 15:10	Soil
DF077005	FS	P13SCSB0710F	06/04/05	06/03/05 15:20	Soil
DF077006	FS	P13SCSB0700R	06/04/05	06/03/05 15:40	Water

The above lab sample ID's and cross reference information apply to samples as received by the laboratory. Modifiers to the lab sample ID may be added for internal tracking purposes. Any modified sample ID will be reflected in the appropriate case narrative only.

CASE NARRATIVE

COLUMBIA ANALYTICAL SERVICES, INC.

Client: MACTEC
Project: Camp Parks
Sample Matrix: Soil/Water

Service Request No.: DF077
Date Received: 6/4/05

CASE NARRATIVE

All analyses were performed consistent with the quality assurance program of Columbia Analytical Services, Inc. (CAS). This report contains analytical results for samples designated for Tier III validation deliverables.

Sample Receipt

One water sample and five soil samples were received for analysis at Columbia Analytical Services on 6/4/05. No discrepancies were noted upon initial sample inspection. The samples were received in good condition and consistent with the accompanying chain of custody form. The samples were stored in a refrigerator at 4°C upon receipt at the laboratory.

Diesel Range Organics by EPA Method 8015B

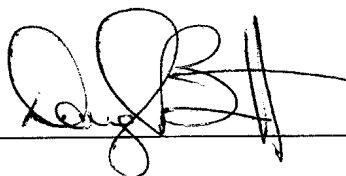
Continuing Calibration Verification Exceptions:

The lower control criterion was exceeded for the following analytes in Continuing Calibration Verification (CCV) G062014 (6/22/05 02:47): Octacosane. The surrogate recoveries in all of the field samples as well as the blank and LCS analyzed in this sequence met acceptance criteria. Therefore, the data quality is not affected. No further corrective action was required.

Elevated Method Reporting Limits:

Sample P13SCSB1105F required dilution due to the presence of elevated levels of Diesel Range Organics. The reporting limits are adjusted to reflect the dilution.

Approved by: _____



Date: 7-12-05

CHAIN OF CUSTODY DOCUMENTATION

5250148
5341 Old Redwood Highway
Suite 300
Petaluma, CA 94954
(707) 793-3800

CHAIN OF CUSTODY FORM

Seq. No.: No 1114

Samplers: David Browne/Scott Tucker

Lab: Columbia

Job Number: 3618048128.02

Name/Location: Camp Park Dublin

Project Manager: Beth Flynn Recorder: David Brome
(Signature Required)

(Signature Required)

[illegible][illegible]

~~DF-076 3 of 3~~
DF-077 1 of 1
ANALYSIS REQUESTED

PAD	LAB #
X	21
X	22
X	23
X	24
X	25
X	26
	33
	44

[illegible]

CHAIN OF CUSTODY RECORD			
Relinquished By (Signature)	(Print Name)	(Company)	Date/Time
<i>David Browne</i>	David Browne	MACTEC	6/3/05 1630
Received By (Signature)	(Print Name)	(Company)	Date/Time
<i>P.BINS</i>	P.BINS	CAS	6/3/05 1630
Relinquished By (Signature)	(Print Name)	(Company)	Date/Time
<i>P.BINS</i>	P.BINS	CAS	6/3/05 1715
Received By (Signature)	(Print Name)	(Company)	Date/Time
<i>CAS SANCHEZ</i>	CAS SANCHEZ		6/4/05 1040
Relinquished By (Signature)	(Print Name)	(Company)	Date/Time
Received By (Signature)	(Print Name)	(Company)	Date/Time
Method of Shipment: <i>FED-EX</i>			

COOLER RECEIPT FORM

Project/Client: MAC TEC / CAMP TANKS Batch No.: DF077

1. Cooler(s)/Sample(s) received on: 6/4/05 Shipped via: EX

Shipping Bill # (s): SEE DF075 # of Coolers/Packages 1

2. Radiological Screening by: [Signature] Acceptable YES Rejected NO N/A

3. Custody seals on outside of cooler:
If yes, where? Front X Rear _____ Lt Side _____ Rt Side _____

Seals intact: YES NO

COOLER/SAMPLE PROCESSING

4. Sample Processing/Tagging by: [Signature]

5. Cooler(s)/Sample(s) Temp's: 4° _____
(or)
Temp. Blank (if included): _____

6. Type of packing material (circle): Ice Blue Ice Bubble Wrap Bubble Bags Zip Locks Webbing

Other: _____

7. Custody papers properly filled out (ink, signed, dated, released, etc.)? YES NO

8. Containers arrived in good condition (not broken, leaking, etc.)? YES NO

9. Samples received with adequate holding time remaining to conduct analysis? YES NO

10. Container labels complete (i.e. analysis, preservation, date/time, etc.)? YES NO

11. Container labels and tags agree with custody papers? B YES NO

12. Correct types of containers used for the tests indicated?
a.) Adequate sample received? If not, note on Exception Report. B YES NO

13. Containers supplied by: CAS Other Other

14. Preserved containers received with the appropriate preservative? YES NO N/A

pH: _____ (or) See pH log.

15. VOA vials free of air bubbles? YES NO N/A

16. Trip Blank preparation date: _____ CAS Other N/A

17. Volatile Soil samples: Encores or Plugs in Vials
Freezer or GC/MS Date: _____ Time: N/A

See Exception Report for discrepancies.

SAMPLE RECEIPT EXCEPTION REPORT

Sample Batch #: DF077 Client/Project: NATIVE CAMP PARKS

1 Holding Time Issues	2 Temperature Issues	3 COC/Label Issues	4 Container Issues	5 <u>Other</u>
--------------------------	-------------------------	-----------------------	-----------------------	-------------------

5.) ALL SOIL SAMPLES RECEIVED IN PLASTIC CONTAINERS.
ORGANICS REQUIRE GLASS OR METAL

Corrective Actions Taken

OK. Project as scheduled.
② 6-9-05

Initiated By: [Signature]

Date: 6/4/05

Client: _____

Client Notification By: _____

Date: _____

GC TPH DIESEL

Sample data

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT ID.

P13SCSB1105F

Lab Name: COLUMBIA ANALYTICAL SERVICES - REDDING

Case No.: DF077 SDG No.: DF077

Lab Sample ID: DF077001

Matrix: SOIL Level: LOW

Lab File ID: F0706009

Sample Wt/Vol: 50.0 G

Date Collected: 06/03/05

Extract Vol: 1 ML

Date Extracted: 06/14/05

% Moisture: not dec. 23

Date Analyzed: 07/06/05

Extraction Type: SONICATION

Dilution Factor: 2.0

CAS NO.	COMPOUND	Units: mg/Kg	MDL	RL	RESULT	Q
	PHCC10C24---TPH-DIESEL (C10-C24)		1.6	26	150	

Data File: \\redding3\acqu\Target\Cl

Page 3

Date : 06-JUL-2005 17:05

Client ID: P13SCSB1105F

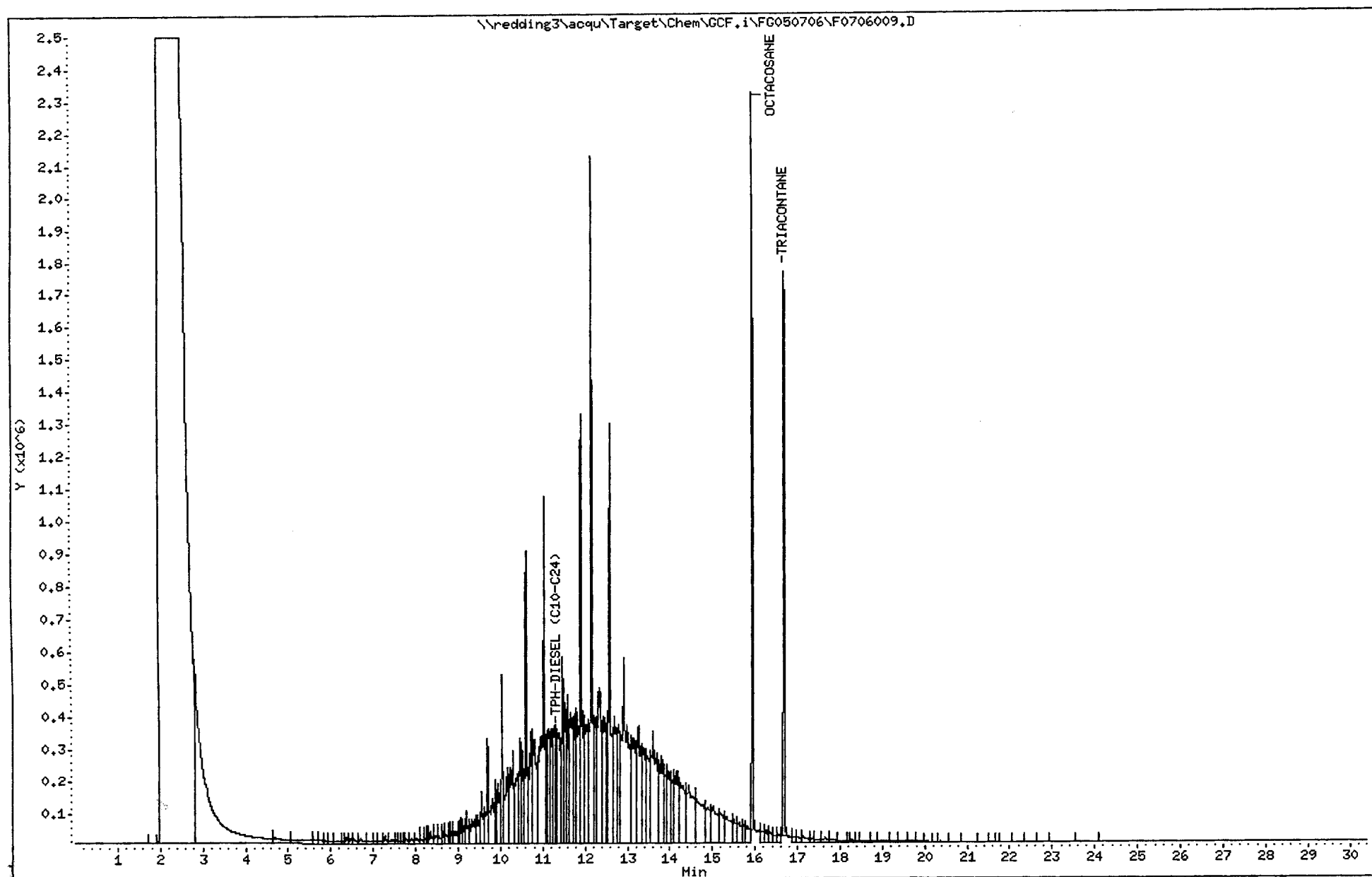
Sample Info: DF077001

Instrument: GCF.i

Operator:

Column diameter: 0.53

Column phase: RTX-5



1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT ID.

P13SCSB1110F

Lab Name: COLUMBIA ANALYTICAL SERVICES - REDDING

Case No.: DF077 SDG No.: DF077

Lab Sample ID: DF077002

Matrix: SOIL Level: LOW

Lab File ID: G0626010

Sample Wt/Vol: 50.1 G

Date Collected: 06/03/05

Extract Vol: 1 ML

Date Extracted: 06/14/05

% Moisture: not dec. 22

Date Analyzed: 06/26/05

Extraction Type: SONICATION

Dilution Factor: 1.0

CAS NO.	COMPOUND	Units: mg/Kg	MDL	RL	RESULT	Q
	PHCC10C24---TPH-DIESEL (C10-C24)		0.81	13	13	U

Data File: \\redding3\acqu\Target\Chem\GCC.i\FG050626\G0626010.D

Page 3

Date : 26-JUN-2005 17:16

Client ID: P13SCSB1110F

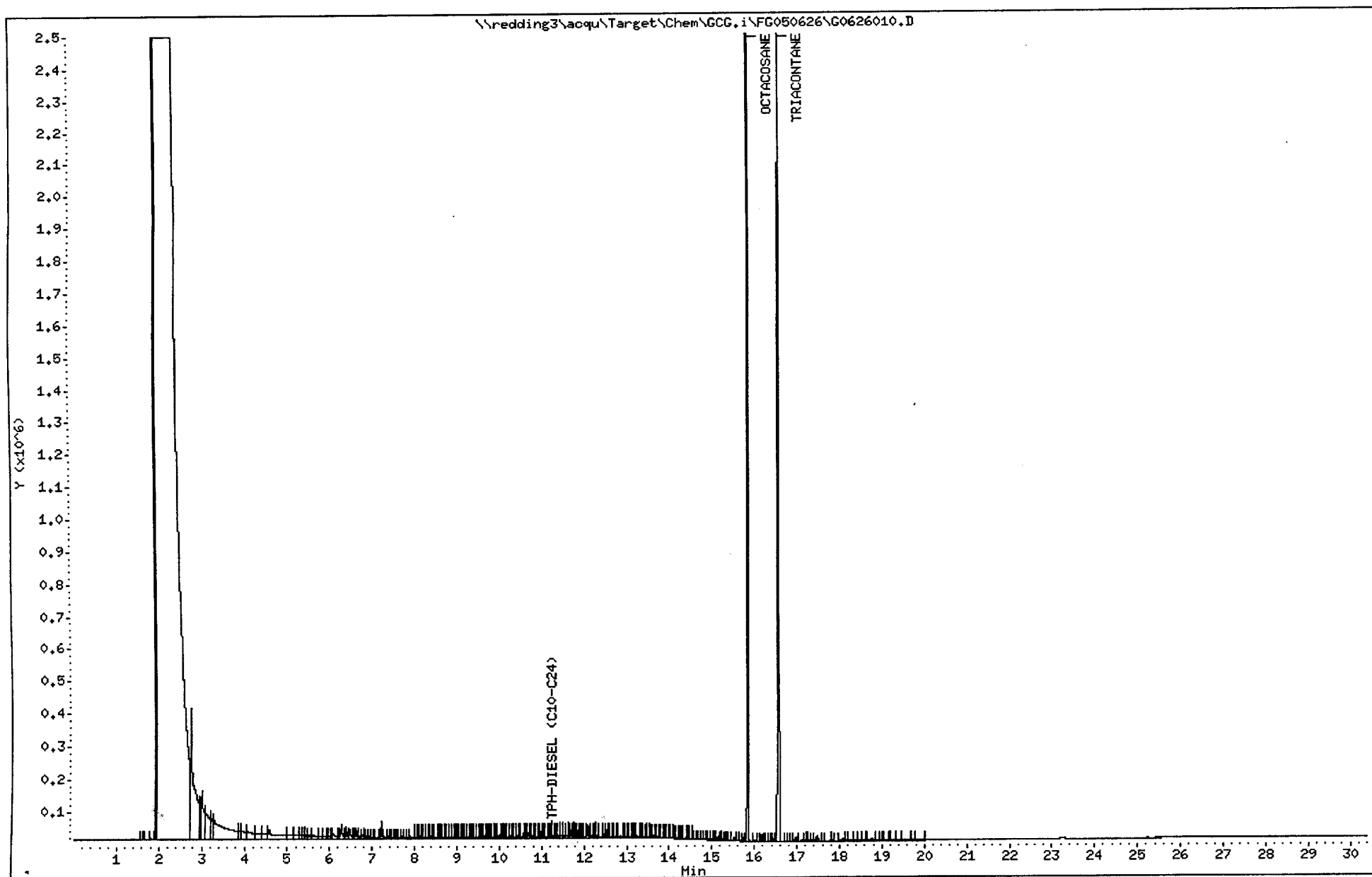
Sample Info: DF077002

Instrument: GCC.i

Operator:

Column diameter: 0.53

Column phase: RTX-5



1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT ID.

P13SCSB0700F

Lab Name: COLUMBIA ANALYTICAL SERVICES - REDDING

Case No.: DF077 SDG No.: DF077

Lab Sample ID: DF077003

Matrix: SOIL Level: LOW

Lab File ID: G0626011

Sample Wt/Vol: 50.5 G

Date Collected: 06/03/05

Extract Vol: 1 ML

Date Extracted: 06/14/05

% Moisture: not dec. 12

Date Analyzed: 06/26/05

Extraction Type: SONICATION

Dilution Factor: 1.0

CAS NO.	COMPOUND	Units: mg/Kg	MDL	RL	RESULT	Q
	PHCC10C24---TPH-DIESEL (C10-C24)		0.72	11	3.7	J

Data File: \\redding3\acqu\Target\Ch

Page 3

Date : 26-JUN-2005 17:56

Client ID: P13SCSB0700F

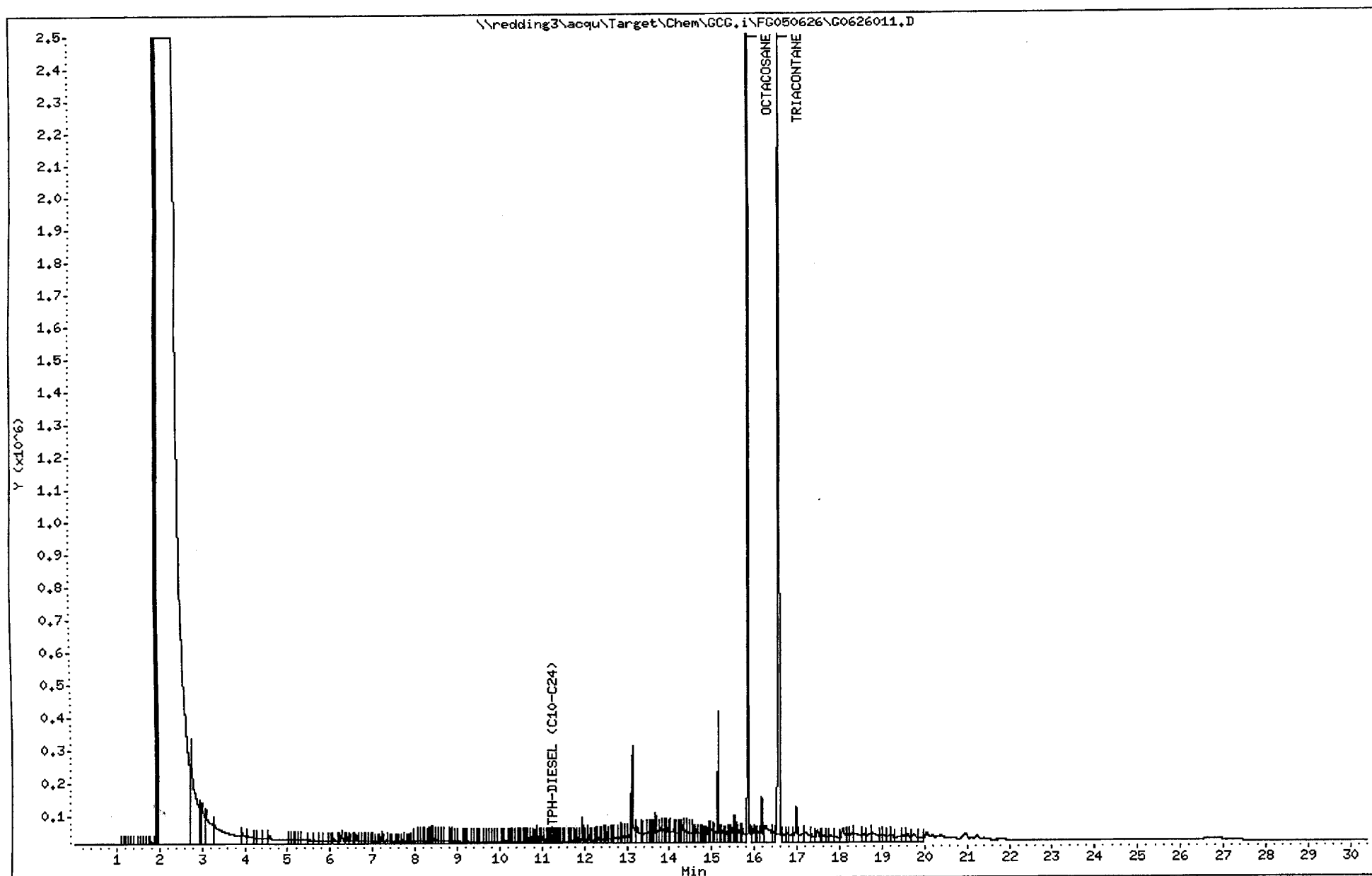
Sample Info: DF077003

Instrument: GCG.i

Operator:

Column diameter: 0.53

Column phase: RTX-5



1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT ID.

P13SCSB0705F

Lab Name: COLUMBIA ANALYTICAL SERVICES - REDDING

Case No.: DF077 SDG No.: DF077

Lab Sample ID: DF077004

Matrix: SOIL Level: LOW

Lab File ID: G0626012

Sample Wt/Vol: 50.6 G

Date Collected: 06/03/05

Extract Vol: 1 ML

Date Extracted: 06/14/05

% Moisture: not dec. 25

Date Analyzed: 06/26/05

Extraction Type: SONICATION

Dilution Factor: 1.0

CAS NO.	COMPOUND	Units: mg/Kg	MDL	RL	RESULT	Q
	PHCC10C24---TPH-DIESEL (C10-C24)		0.84	13	13	U

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT ID.

P13SCSB0710F

Lab Name: COLUMBIA ANALYTICAL SERVICES - REDDING

Case No.: DF077 SDG No.: DF077

Lab Sample ID: DF077005

Matrix: SOIL Level: LOW

Lab File ID: G0626013

Sample Wt/Vol: 49.9 G

Date Collected: 06/03/05

Extract Vol: 1 ML

Date Extracted: 06/14/05

% Moisture: not dec. 18

Date Analyzed: 06/26/05

Extraction Type: SONICATION

Dilution Factor: 1.0

CAS NO.	COMPOUND	Units: mg/Kg	MDL	RL	RESULT	Q
PHCC10C24---	TPH-DIESEL (C10-C24)		0.77	12	12	U

Data File: \\redding3\acqu\Target\Chem\GCG.i\FG050626\G0626013.D

Date : 26-JUN-2005 19:15

Client ID: P13SCSB0710F

Sample Info: DF077005

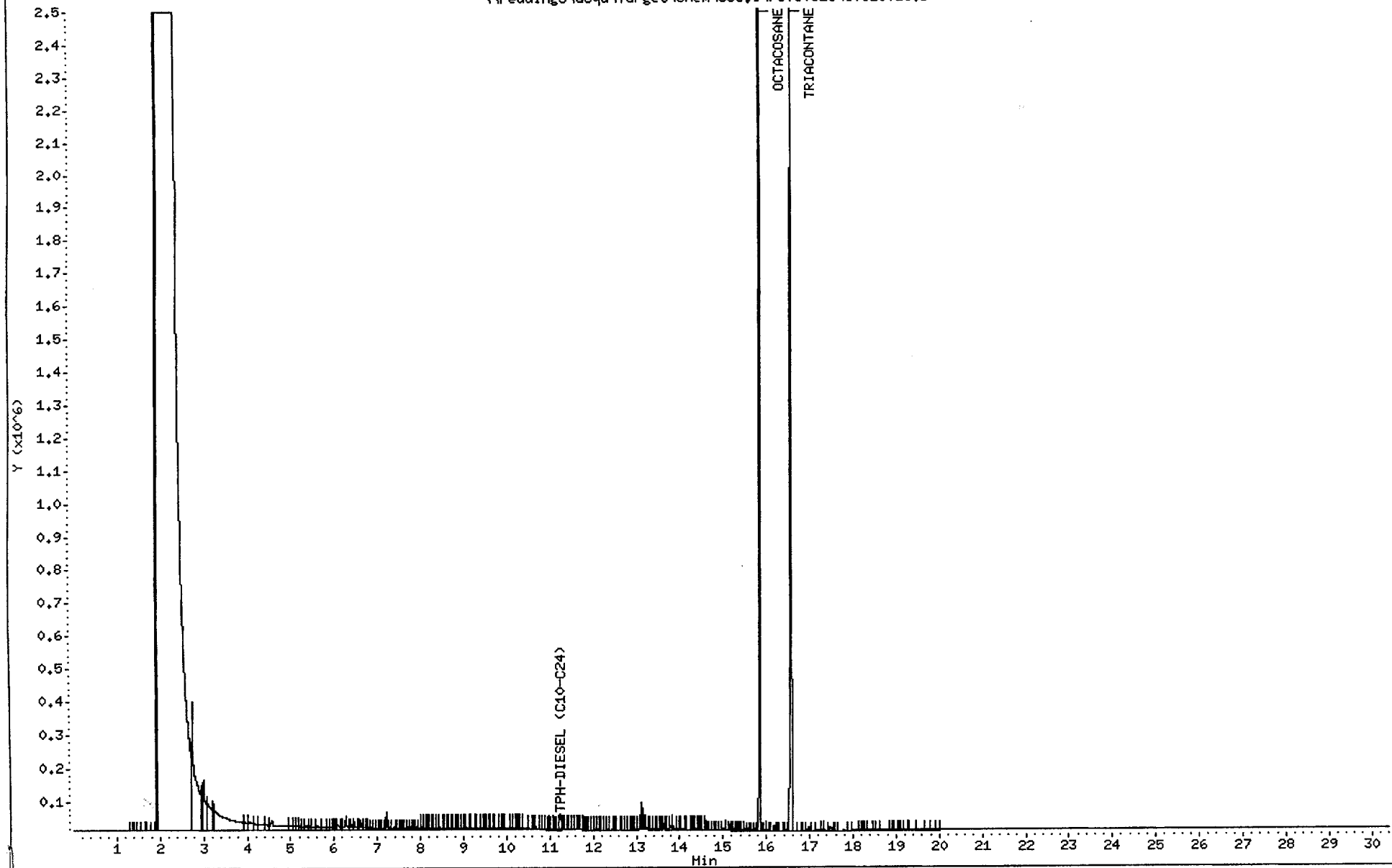
Instrument: GCG.i

Operator:

Column diameter: 0.53

Column phase: RTX-5

\\redding3\acqu\Target\Chem\GCG.i\FG050626\G0626013.D



1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT ID.

P13SCSB0700R

Lab Name: COLUMBIA ANALYTICAL SERVICES - REDDING

Case No.: DF077 SDG No.: DF077

Lab Sample ID: DF077006

Matrix: WATER Level: LOW

Lab File ID: G0621008

Sample Wt/Vol: 1.030 L

Date Collected: 06/03/05

Extract Vol: 1 ML

Date Extracted: 06/09/05

Date Analyzed: 06/21/05

Extraction Type: SEP FUNNEL

Dilution Factor: 1.0

CAS NO.	COMPOUND	Units: mg/L	MDL	RL	RESULT	Q
	PHCC10C24---TPH-DIESEL (C10-C24)		0.018	0.10	0.073	J

Data File: \\redding3\acqui\Target\Chem\GCC.i\FG050621\G0621008.D

Date : 21-JUN-2005 22:49

Client ID: P13SCSB0700R

Sample Info: DF077006

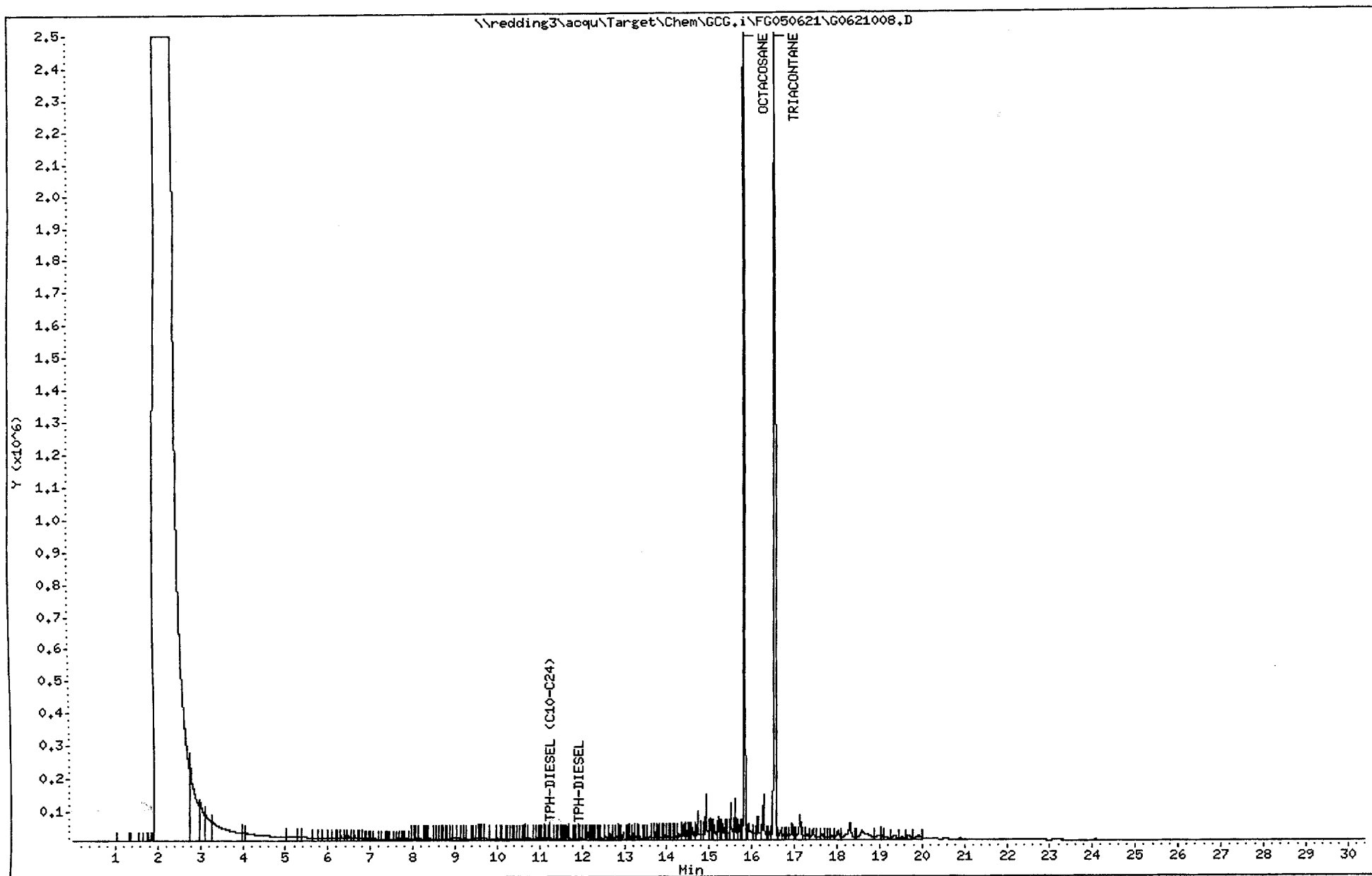
Purge Volume: 1.0

Column phase: RTX-5

Instrument: GCC.i

Operator:

Column diameter: 0.53



QC Summary

Data File: \\redding3\acqu\Target\Chem\GCC.i\FC050621\G0621004.D

Date : 21-JUN-2005 20:10

Client ID: DMB20609

Sample Info: DMB20609

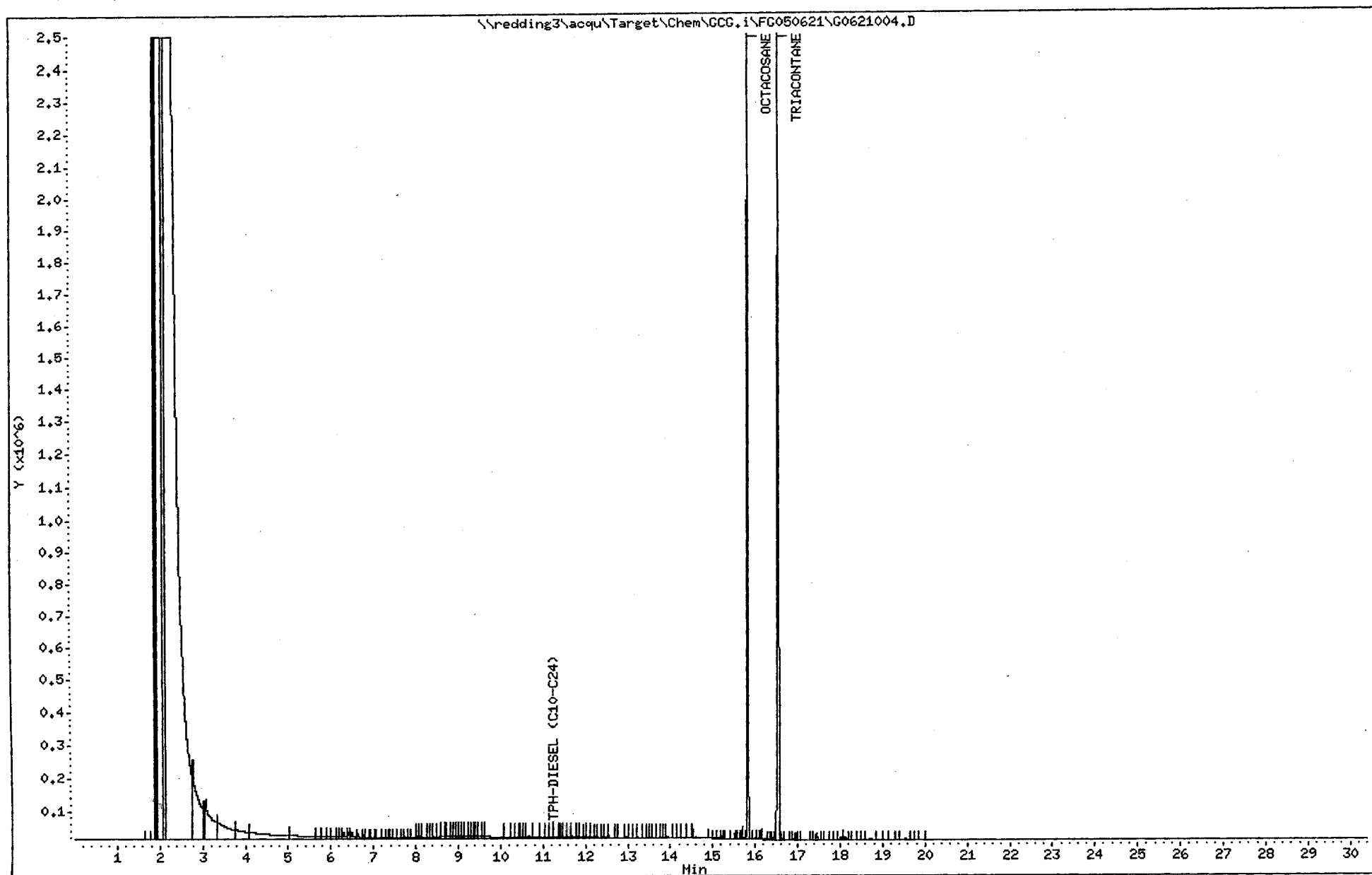
Purge Volume: 1.0

Column phase: RTX-5

Instrument: GCC.i

Operator:

Column diameter: 0.53



Data File: \\redding3\acqui\Target\Chem\GCC.i\FG050621\G0621005.D

Page 3

Date : 21-JUN-2005 20:50

Client ID: DWB20609LCS

Sample Info: DWB20609LCS

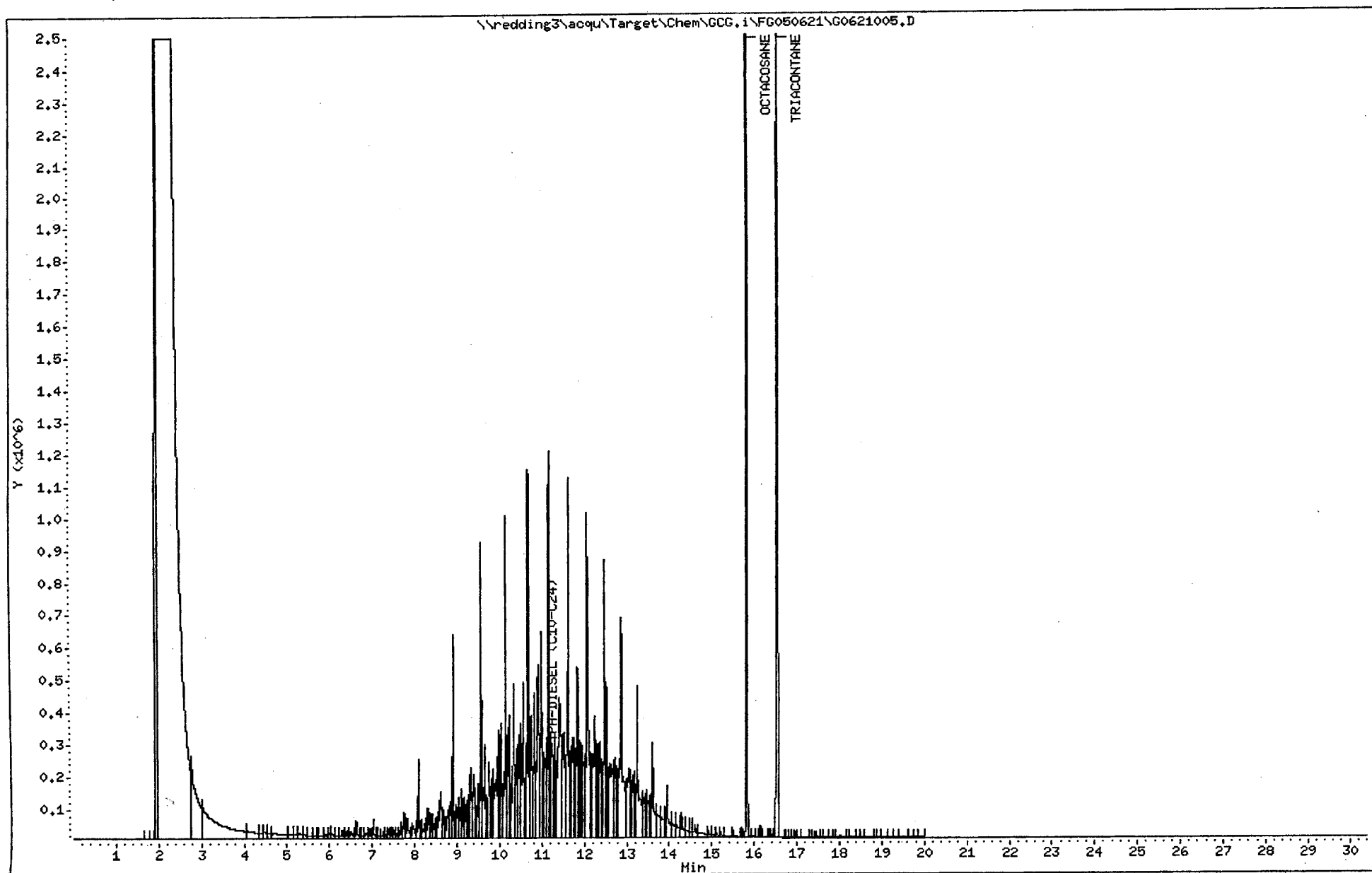
Purge Volume: 1.0

Column phase: RTX-5

Instrument: GCC.i

Operator:

Column diameter: 0.53



Data File: \\redding3\acqu\Target\Chem\GCG.i\FG050621\G0621006.D

Page 3

Date : 21-JUN-2005 21:30

Client ID: DWB20609LCSD

Sample Info: DWB20609LCSD

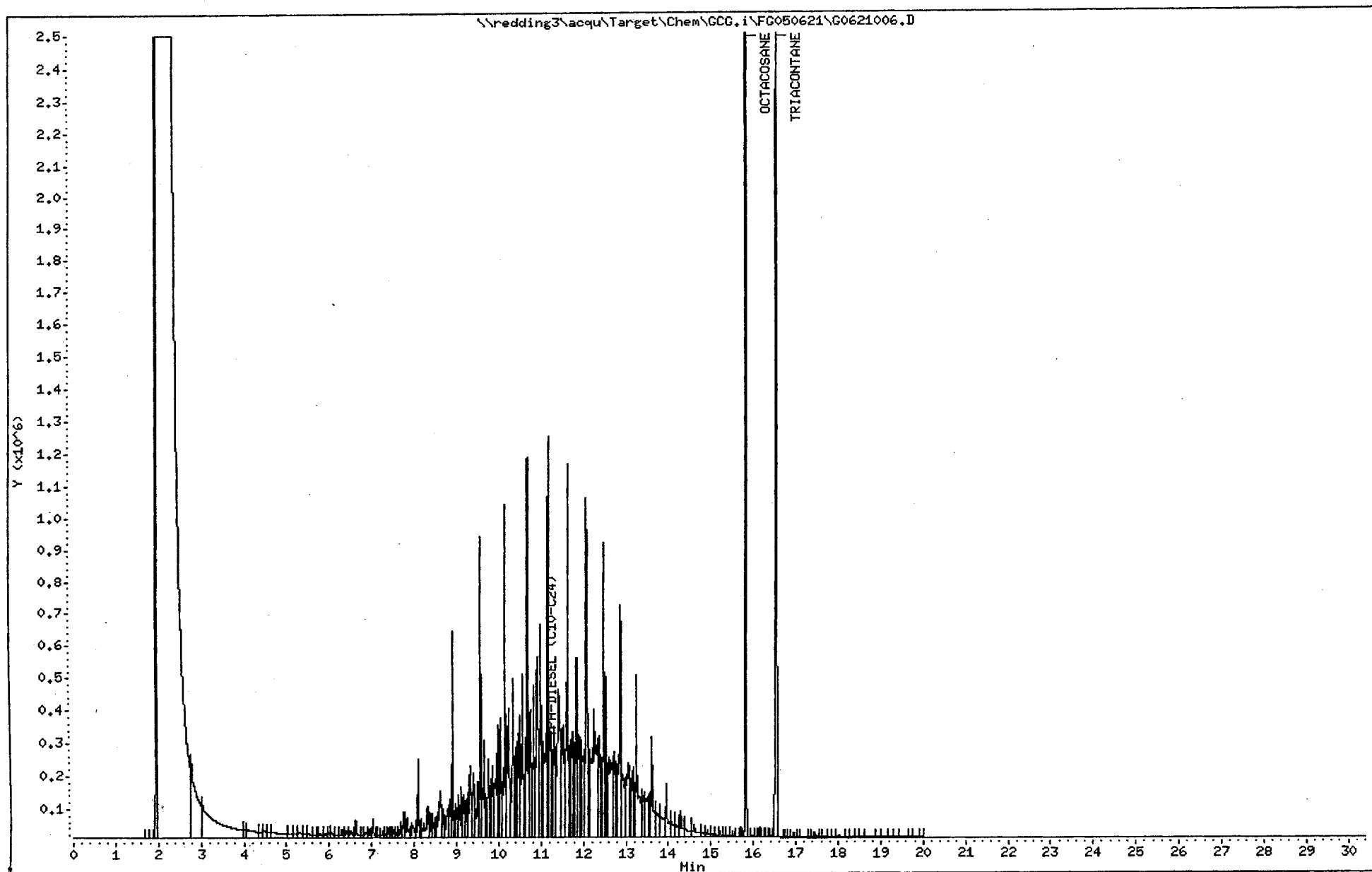
Purge Volume: 1.0

Column phase: RTX-5

Instrument: GCG.i

Operator:

Column diameter: 0.53



Data File: \\redding3\acqu\Target\Che

Date : 26-JUN-2005 15:17

Client ID: DSB10614

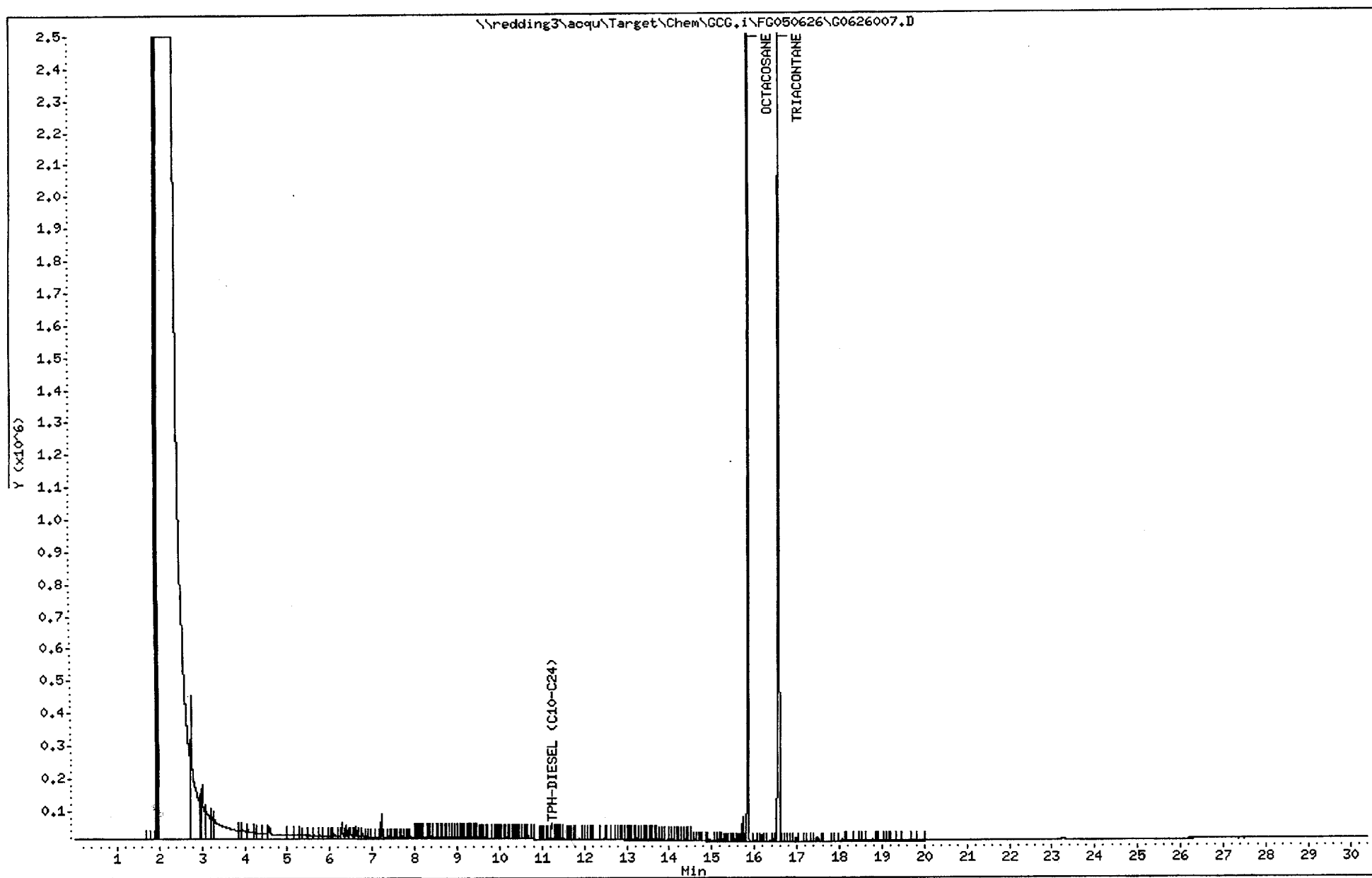
Sample Info: DSB10614

Instrument: GCG.i

Operator:

Column diameter: 0.53

Column phase: RTX-5



Data File: \\redding3\acq\Target\Chem\GCC.i\FG050626\G0626008.D

Page 3

Date : 26-JUN-2005 15:57

Client ID: DSB10614LCS

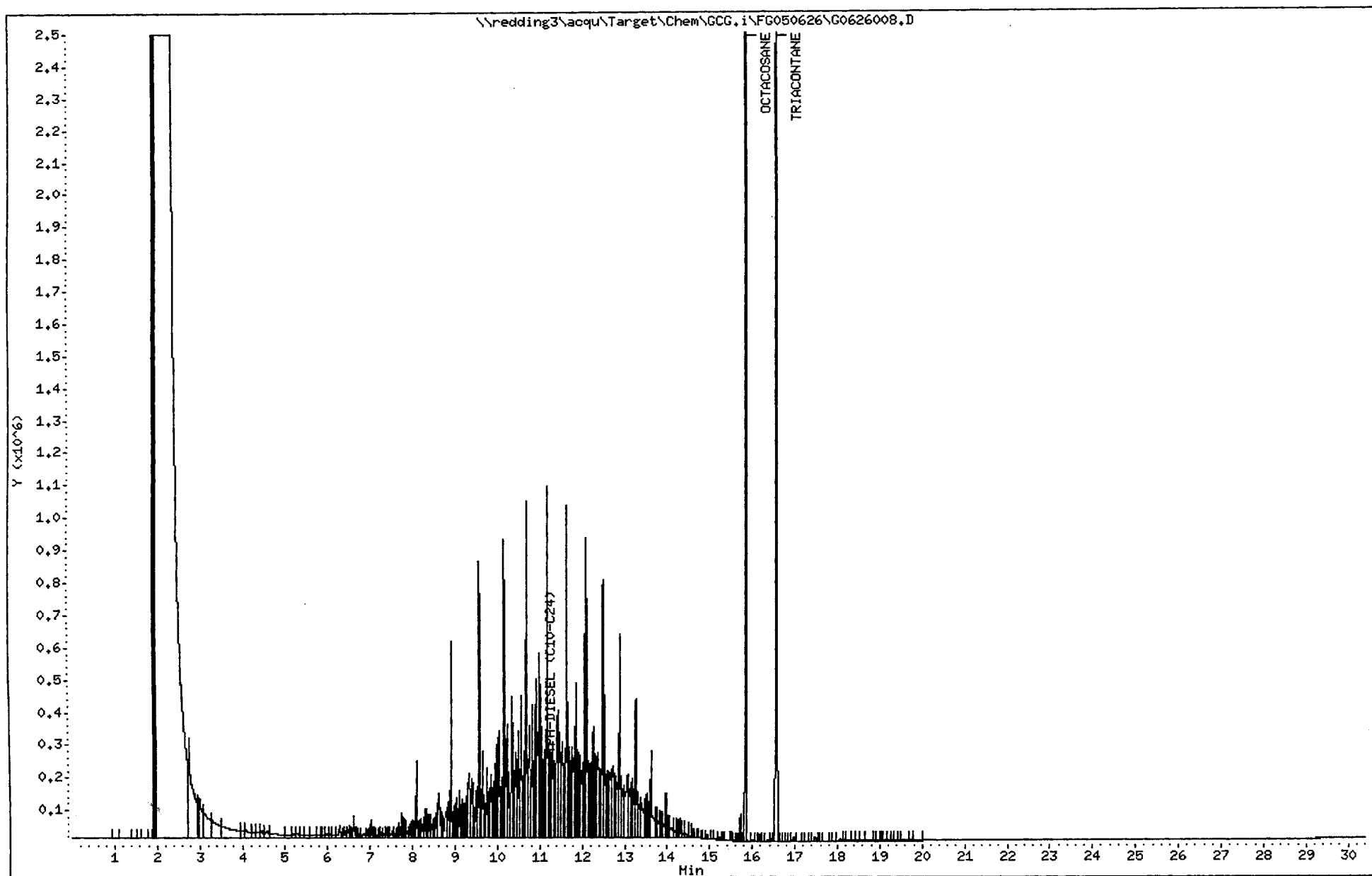
Sample Info: DSB10614LCS

Instrument: GCC.i

Operator:

Column diameter: 0.53

Column phase: RTX-5



Date : 26-JUN-2005 19:55

Client ID: P13SCSB0710FMS

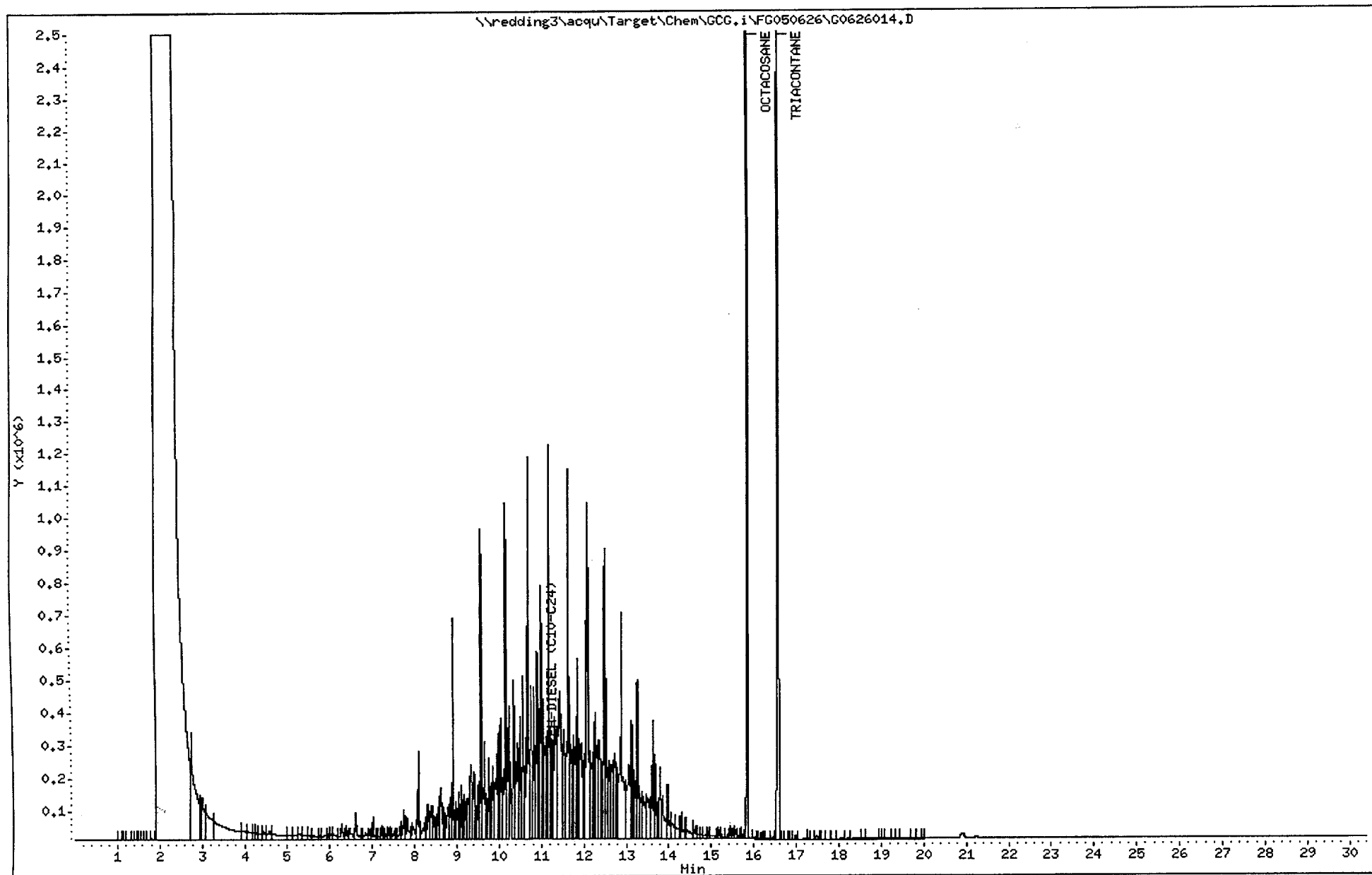
Sample Info: DF077005MS

Instrument: GCG.i

Operator:

Column diameter: 0.53

Column phase: RTX-5



Data File: \\redding3\acq\Target\Chem\GCG.i\F0050626\G0626015.D

Page 3

Date : 26-JUN-2005 20:35

Client ID: P13SCSB0710FMSD

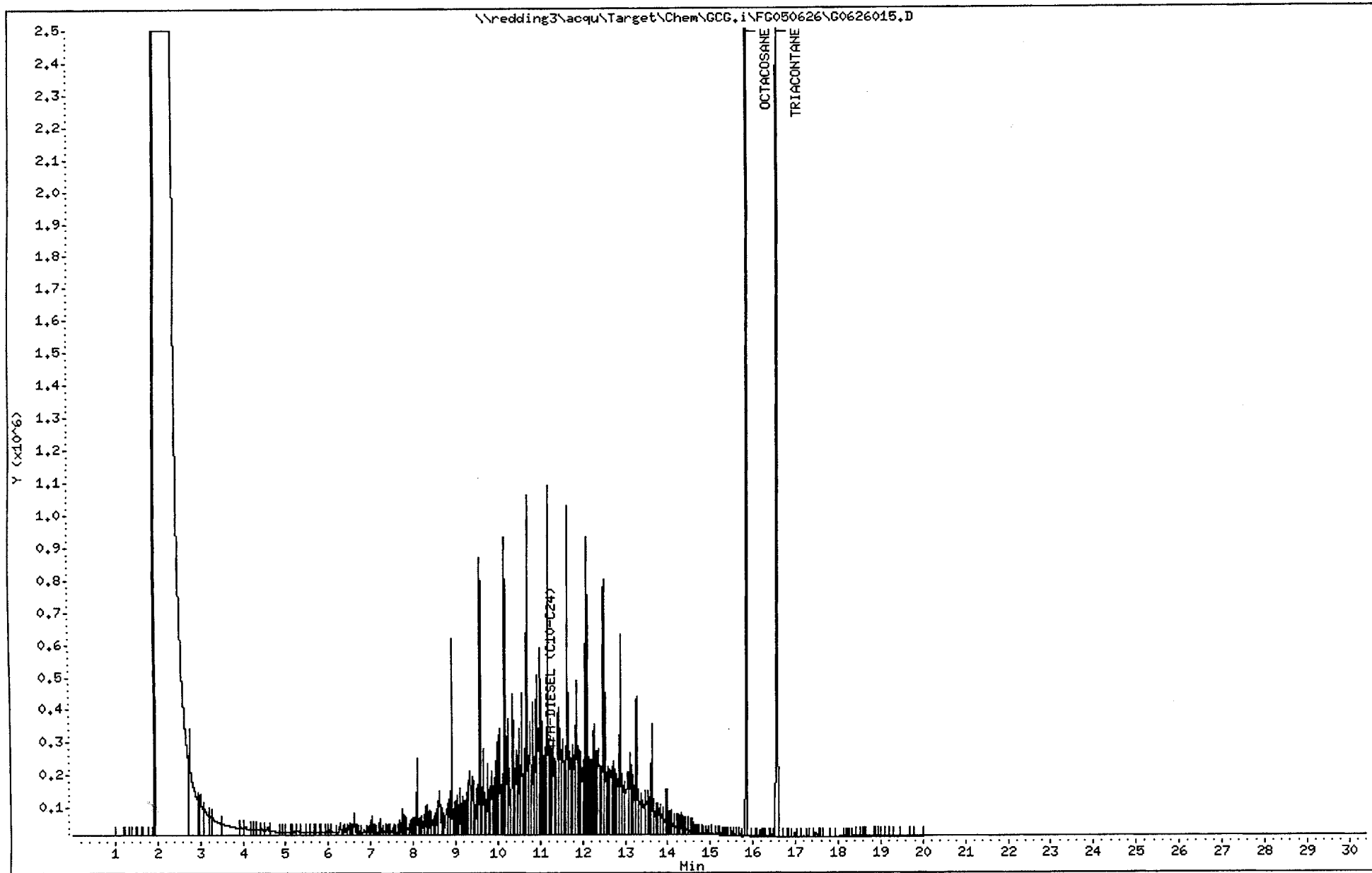
Sample Info: DF077005HSD

Instrument: GCG.i

Operator:

Column diameter: 0.53

Column phase: RTX-5



1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT ID.

DSB10614

Lab Name: COLUMBIA ANALYTICAL SERVICES - REDDING

Case No.: DF077 SDG No.: DF077

Lab Sample ID: DSB10614

Matrix: SOIL Level: LOW

Lab File ID: G0626007

Sample Wt/Vol: 50.1 G

Date Collected:

Extract Vol: 1 ML

Date Extracted: 06/14/05

Date Analyzed: 06/26/05

Extraction Type: SONICATION

Dilution Factor: 1.0

CAS NO.	COMPOUND	Units: mg/Kg	MDL	RL	RESULT	Q
PHCC10C24---	TPH-DIESEL (C10-C24)		0.63	10	10	U

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT ID.

DWB20609

Lab Name: COLUMBIA ANALYTICAL SERVICES - REDDING

Case No.: DF077 SDG No.: DF077

Lab Sample ID: DWB20609

Matrix: WATER Level: LOW

Lab File ID: G0621004

Sample Wt/Vol: 1.000 L

Date Collected:

Extract Vol: 1 ML

Date Extracted: 06/09/05

Date Analyzed: 06/21/05

Extraction Type: SEP FUNNEL

Dilution Factor: 1.0

CAS NO.	COMPOUND	Units: mg/L	MDL	RL	RESULT	Q
	PHCC10C24---TPH-DIESEL (C10-C24)_____		0.018	0.10	0.10	U

2C
SOIL SEMIVOLATILE SURROGATE RECOVERY

Lab Name: COLUMBIA ANALYTICAL SERVICES - REDDING

Case No.: DF077 SDG No.: DF077

Level: LOW

	LAB ID	CLIENT ID.	S1 (OCT) #	S2 (TRI) #	S3	TOT OUT
	=====	=====	=====	=====	=====	=====
01	DSB10614	DSB10614	70	78		0
02	DSB10614LCS	DSB10614LCS	73	81		0
03	DF077002	P13SCSB1110F	66	79		0
04	DF077003	P13SCSB0700F	75	84		0
05	DF077004	P13SCSB0705F	63	68		0
06	DF077005	P13SCSB0710F	66	80		0
07	DF077005MS	P13SCSB0710FMS	82	89		0
08	DF077005MSD	P13SCSB0710FMSD	70	78		0
09	DF077001	P13SCSB1105F	88	87		0
10						
11						
12						
13						
14						
15						
16						
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QC LIMITS

S1 (OCT) = OCTACOSANE (56-110)

S2 (TRI) = TRIACONTANE (52-107)

Column to be used to flag recovery values

* Values outside of contract required QC limits

D Surrogates diluted out

2C
WATER SEMIVOLATILE SURROGATE RECOVERY

Lab Name: COLUMBIA ANALYTICAL SERVICES - REDDING

Case No.: DF077 SDG No.: DF077

	LAB ID	CLIENT ID.	S1 (OCT) #	S2 (TRI) #	S3	TOT OUT
	=====	=====	=====	=====	=====	=====
01	DWB20609	DWB20609	64	68		0
02	DWB20609LCS	DWB20609LCS	79	77		0
03	DWB20609LCSD	DWB20609LCSD	80	79		0
04	DF077006	P13SCSB0700R	84	94		0
05						
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S1 (OCT) = OCTACOSANE	QC LIMITS
S2 (TRI) = TRIACONTANE	(58-111)
	(54-109)

Column to be used to flag recovery values
 * Values outside of contract required QC limits
 D Surrogates diluted out

Date : 26-JUN-2005 18:36

Client ID: P13SCSB0705F

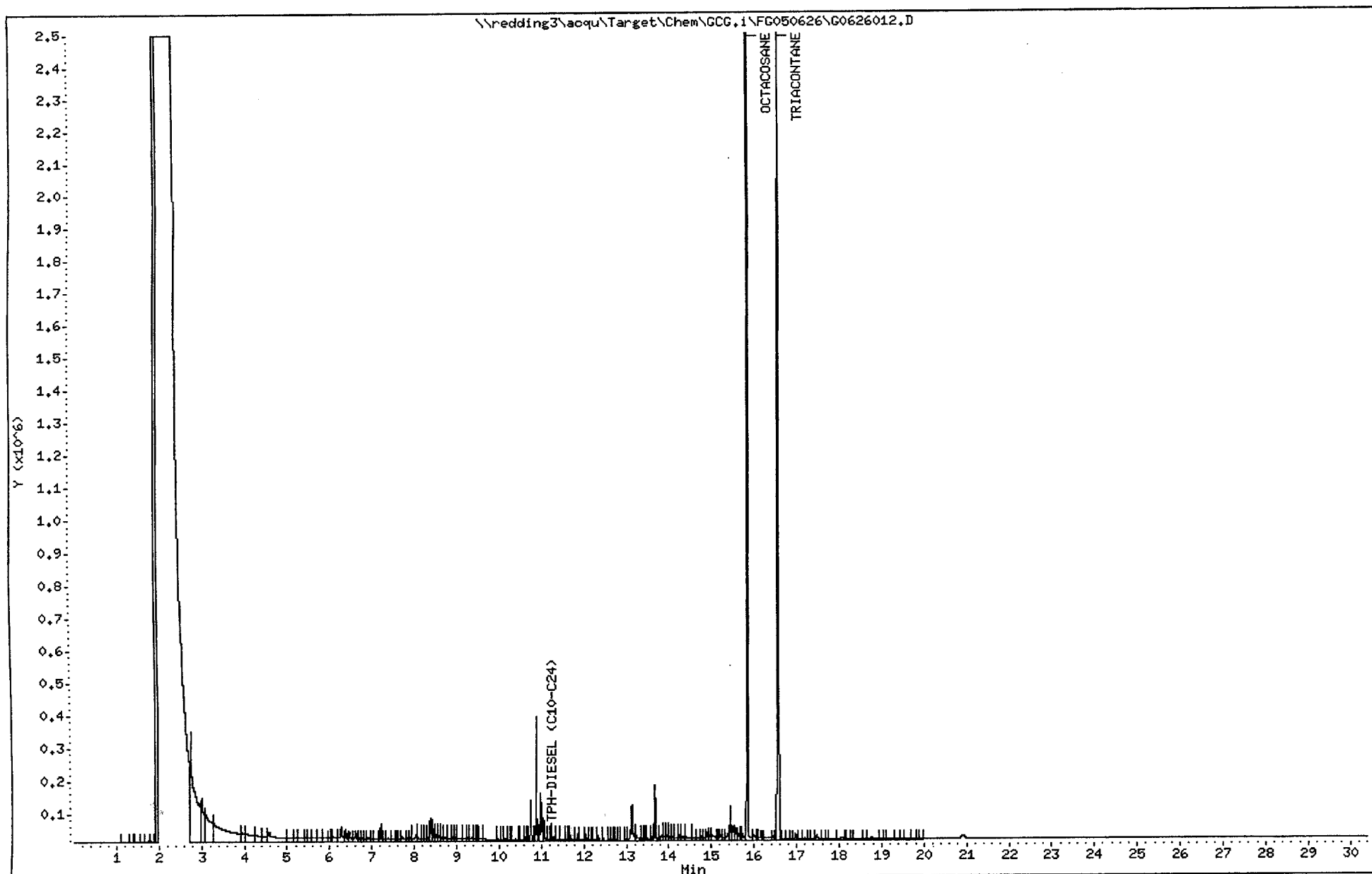
Sample Info: DF077004

Instrument: GCG.i

Operator:

Column diameter: 0.53

Column phase: RTX-5



3C
SOIL SEMIVOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: COLUMBIA ANALYTICAL SERVICES - REDDING

Case No.: DF077 SDG No.: DF077

Matrix Spike - Sample No.: P13SCSB0710F Level: LOW

COMPOUND	SPIKE ADDED (mg/Kg)	SAMPLE CONCENTRATION (mg/Kg)	MS CONCENTRATION (mg/Kg)	MS % REC #	QC. LIMITS REC.
TPH-DIESEL (C10-C24)	60.576	0.00000	51.007	84	65-135

COMPOUND	SPIKE ADDED (mg/Kg)	MSD CONCENTRATION (mg/Kg)	MSD % REC #	% RPD #	QC LIMITS RPD	REC.
TPH-DIESEL (C10-C24)	60.480	43.418	72	16	30	65-135

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

RPD: 0 out of 1 outside limits
Spike Recovery: 0 out of 2 outside limits

3D
SOIL SEMIVOLATILE LAB CONTROL SAMPLE

Lab Name: COLUMBIA ANALYTICAL SERVICES - REDDING

Case No.: DF077 SDG No.: DF077

LCS - Sample No.: DSB10614 Level: LOW

COMPOUND	SPIKE ADDED (mg/Kg)	SAMPLE CONCENTRATION (mg/Kg)	LCS CONCENTRATION (mg/Kg)	LCS % REC #	QC. LIMITS REC.
TPH-DIESEL (C10-C24)	49.910	N/A	35.273	71	65-135

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

RPD: 0 out of 0 outside limits
Spike Recovery: 0 out of 1 outside limits

3C
WATER SEMIVOLATILE LAB CONTROL SAMPLE

Lab Name: COLUMBIA ANALYTICAL SERVICES - REDDING

Case No.: DF077 SDG No.: DF077

LCS - Sample No.: DWB20609

COMPOUND	SPIKE ADDED (mg/L)	SAMPLE CONCENTRATION (mg/L)	LCS CONCENTRATION (mg/L)	LCS % REC #	QC. LIMITS REC.
TPH-DIESEL (C10-C24)	2.5000	N/A	1.9675	79	65-135

COMPOUND	SPIKE ADDED (mg/L)	LCSD CONCENTRATION (mg/L)	LCSD % REC #	% RPD #	QC LIMITS RPD	REC.
TPH-DIESEL (C10-C24)	2.5000	2.0394	82	4	20	65-135

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

RPD: 0 out of 1 outside limits
Spike Recovery: 0 out of 2 outside limits

4B
SEMIVOLATILE METHOD BLANK SUMMARY

Client ID.

DSB10614

Lab Name: COLUMBIA ANALYTICAL SERVICES - REDDING

Case No.: DF077 SDG No.: DF077

Lab File ID: G0626007 Lab Sample ID: DSB10614

Date Extracted: 06/14/05 Extraction Type: SONICATION

Date Analyzed: 06/26/05 Time Analyzed: 1517

Matrix: SOIL Level: (low/med) LOW

Instrument ID: GCG

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

	CLIENT ID.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
	=====	=====	=====	=====
01	DSB10614LCS	DSB10614LCS	G0626008	06/26/05
02	P13SCSB1110F	DF077002	G0626010	06/26/05
03	P13SCSB0700F	DF077003	G0626011	06/26/05
04	P13SCSB0705F	DF077004	G0626012	06/26/05
05	P13SCSB0710F	DF077005	G0626013	06/26/05
06	P13SCSB0710FMS	DF077005MS	G0626014	06/26/05
07	P13SCSB0710FMSD	DF077005MSD	G0626015	06/26/05
08	P13SCSB1105F	DF077001	F0706009	07/06/05
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4B
SEMIVOLATILE METHOD BLANK SUMMARY

Client ID.

DWB20609

Lab Name: COLUMBIA ANALYTICAL SERVICES - REDDING

Case No.: DF077 SDG No.: DF077

Lab File ID: G0621004 Lab Sample ID: DWB20609

Date Extracted: 06/09/05 Extraction Type: SEP FUNNEL

Date Analyzed: 06/21/05 Time Analyzed: 2010

Matrix: WATER Level: (low/med) LOW

Instrument ID: GCG

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

	CLIENT ID.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
	=====	=====	=====	=====
01	DWB20609LCS	DWB20609LCS	G0621005	06/21/05
02	DWB20609LCSD	DWB20609LCSD	G0621006	06/21/05
03	P13SCSB0700R	DF077006	G0621008	06/21/05
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Standards data

6C
SEMIVOLATILE ORGANICS INITIAL CALIBRATION DATA
ANALYTE CONCENTRATIONS

Lab Name: COLUMBIA ANALYTICAL SERVICES - REDDING

Case No.: DF077 SDG No.: DF077

Instrument ID: GCG

ICAL Date(s): 06/17/05

Analyte Concentration:

LAB FILE ID:		RRF0.1=G0617005.D		RRF0.5=G0617006.D	
RRF1 =G0617007.D		RRF2.5=G0617008.D		RRF4 =G0617012.D	
COMPOUND	RRF0.1	RRF0.5	RRF1	RRF2.5	RRF4
TPH-DIESEL (C10-C24)	0.100	0.500	1.000	2.500	4.000
OCTACOSANE	0.100	0.150	0.250	0.300	0.350
TRIACONTANE	0.100	0.150	0.250	0.300	0.350

6C
SEMIVOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: COLUMBIA ANALYTICAL SERVICES - REDDING

Case No.: DF077 SDG No.: DF077

Instrument ID: GCG

ICAL Date(s): 06/17/05

LAB FILE ID:		RRF0.1=G0617005.D		RRF0.5=G0617006.D			
RRF1 =G0617007.D		RRF2.5=G0617008.D		RRF4 =G0617012.D			
COMPOUND	RRF0.1	RRF0.5	RRF1	RRF2.5	RRF4	RRF	%RSD
=====	=====	=====	=====	=====	=====	=====	=====
TPH-DIESEL (C10-C24)	7268	6453	7159	7052	6855	6957	4.6
=====	=====	=====	=====	=====	=====	=====	=====
OCTACOSANE	5767	5764	6790	7129	7712	6632	12.9
TRIACONTANE	5618	5949	6827	6644	7182	6444	10.0

RF's divided by 100000

6C
SEMIVOLATILE ORGANICS INITIAL CALIBRATION DATA
ANALYTE CONCENTRATIONS

Lab Name: COLUMBIA ANALYTICAL SERVICES - REDDING

Case No.: DF077 SDG No.: DF077

Instrument ID: GCF

ICAL Date(s): 07/06/05

Analyte Concentration:

LAB FILE ID:		RRF0.1=F0706003.D	RRF0.5=F0706004.D		
RRF1 =F0706005.D		RRF2.5=F0706006.D	RRF4 =F0706007.D		
COMPOUND	RRF0.1	RRF0.5	RRF1	RRF2.5	RRF4
TPH-DIESEL (C10-C24)	0.100	0.500	1.000	2.500	4.000
OCTACOSANE	0.100	0.150	0.250	0.300	0.350
TRIACONTANE	0.100	0.150	0.250	0.300	0.350

6C
SEMIVOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: COLUMBIA ANALYTICAL SERVICES - REDDING

Case No.: DF077 SDG No.: DF077

Instrument ID: GCF

ICAL Date(s): 07/06/05

LAB FILE ID:		RRF0.1=F0706003.D			RRF0.5=F0706004.D		
RRF1 =F0706005.D		RRF2.5=F0706006.D			RRF4 =F0706007.D		
COMPOUND	RRF0.1	RRF0.5	RRF1	RRF2.5	RRF4	$\overline{\text{RRF}}$	%RSD
TPH-DIESEL (C10-C24)	3490	2999	3054	3051	3072	3133	6.4
OCTACOSANE	3025	3175	3074	3284	3157	3143	3.2
TRIACONTANE	3090	3225	3118	3333	3202	3193	3.0

RF's divided by 10000

7B
SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: COLUMBIA ANALYTICAL SERVICES - REDDING

Instrument ID: GCG	Case No.: DF077	SDG No.: DF077
Lab File ID: G0617015	CCV Date/Time:	06/17/05 2026
	ICAL Date/Time (1st pt):	06/17/05 1350
	ICAL Date/Time (Last pt):	06/17/05 1827

COMPOUND	\overline{RRF}	RRF1	CURVE TYPE	%D	MAX %D
TPH-DIESEL (C10-C24)	6957	6747	AVG	-3.0	15.0
OCTACOSANE	6632	6793	AVG	2.4	15.0
TRIACONTANE	6444	6938	AVG	7.7	15.0

RF's divided by 100000

7B
SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: COLUMBIA ANALYTICAL SERVICES - REDDING

Instrument ID: GCG	Case No.: DF077	SDG No.: DF077
Lab File ID: G0621003	CCV Date/Time:	06/21/05 1931
	ICAL Date/Time (1st pt):	06/17/05 1350
	ICAL Date/Time (Last pt):	06/17/05 1827

COMPOUND	RRF	RRF2.5	CURVE TYPE	%D	MAX %D
TPH-DIESEL (C10-C24)	6957	7224	AVG	3.8	15.0
OCTACOSANE	6632	7233	AVG	9.0	15.0
TRIACONTANE	6444	6563	AVG	1.8	15.0

RF's divided by 100000

7B
SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: COLUMBIA ANALYTICAL SERVICES - REDDING

Instrument ID: GCG	Case No.: DF077	SDG No.: DF077
Lab File ID: G0621014	CCV Date/Time:	06/22/05 0247
	ICAL Date/Time (1st pt):	06/17/05 1350
	ICAL Date/Time (Last pt):	06/17/05 1827

COMPOUND	RRF	RRF1	CURVE TYPE	%D	MAX %D
TPH-DIESEL (C10-C24)	6957	6996	AVG	0.6	15.0
OCTACOSANE	6632	5599	AVG	-15.6	15.0
TRIACONTANE	6444	5728	AVG	-11.1	15.0

<-

RF's divided by 100000

7B
SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: COLUMBIA ANALYTICAL SERVICES - REDDING

Instrument ID: GCG	Case No.: DF077	SDG No.: DF077
Lab File ID: G0626006	CCV Date/Time:	06/26/05 1438
	ICAL Date/Time (1st pt):	06/17/05 1350
	ICAL Date/Time (Last pt):	06/17/05 1827

COMPOUND	RRF	RRF2.5	CURVE TYPE	%D	MAX %D
TPH-DIESEL (C10-C24)	6957	6544	AVG	-5.9	15.0
OCTACOSANE	6632	7397	AVG	11.5	15.0
TRIACONTANE	6444	7272	AVG	12.8	15.0

RF's divided by 100000

7B
SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: COLUMBIA ANALYTICAL SERVICES - REDDING

Instrument ID: GCG	Case No.: DF077	SDG No.: DF077
Lab File ID: G0626018	CCV Date/Time:	06/26/05 2234
	ICAL Date/Time (1st pt):	06/17/05 1350
	ICAL Date/Time (Last pt):	06/17/05 1827

COMPOUND	RRF	RRF2.5	CURVE TYPE	%D	MAX %D
TPH-DIESEL (C10-C24)	6957	6659	AVG	-4.3	15.0
OCTACOSANE	6632	7524	AVG	13.4	15.0
TRIACONTANE	6444	7388	AVG	14.6	15.0

RF's divided by 100000

7B
SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: COLUMBIA ANALYTICAL SERVICES - REDDING

Instrument ID: GCF	Case No.: DF077	SDG No.: DF077
Lab File ID: F0706008	CCV Date/Time:	07/06/05 1625
	ICAL Date/Time (1st pt):	07/06/05 1301
	ICAL Date/Time (Last pt):	07/06/05 1541

COMPOUND	\overline{RRF}	RRF1	CURVE TYPE	%D	MAX %D
TPH-DIESEL (C10-C24)	3133	3136	AVG	0.1	15.0
OCTACOSANE	3143	3309	AVG	5.3	15.0
TRIACONTANE	3193	3360	AVG	5.2	15.0

RF's divided by 10000

7B
SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: COLUMBIA ANALYTICAL SERVICES - REDDING

Instrument ID: GCF Case No.: DF077 SDG No.: DF077
Lab File ID: F0706020 CCV Date/Time: 07/07/05 0022
ICAL Date/Time (1st pt): 07/06/05 1301
ICAL Date/Time (Last pt): 07/06/05 1541

COMPOUND	\overline{RRF}	RRF1	CURVE TYPE	%D	MAX %D
TPH-DIESEL (C10-C24)	3133	2994	AVG	-4.4	15.0
OCTACOSANE	3143	3197	AVG	1.7	15.0
TRIACONTANE	3193	3280	AVG	2.7	15.0

RF's divided by 10000

8D
SEMIVOLATILE ANALYTICAL SEQUENCE

Lab Name: COLUMBIA ANALYTICAL SERVICES - REDDING

Case No.: DF077 SDG No.: DF077

GC Column: RTX-5 ID: 0.53 (mm) ICAL Date(s): 06/17/05 06/17/05

Instrument ID: GCG

	CLIENT SAMPLE ID	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED
	=====	=====	=====	=====
01	DSTD 0.1	DSTD1	06/17/05	1350
02	DSTD 0.5	DSTD2	06/17/05	1430
03	DSTD 1.0	DSTD3	06/17/05	1509
04	DSTD 2.5	DSTD4	06/17/05	1549
05	DSTD 4.0	DSTD5	06/17/05	1827
06	QCALSTD 1.0	QCALTSTD	06/17/05	2026
07	DSTD 2.5 MG/ML	DSTD4	06/21/05	1931
08	DWB20609	DWB20609	06/21/05	2010
09	DWB20609LCS	DWB20609LCS	06/21/05	2050
10	DWB20609LCSD	DWB20609LCSD	06/21/05	2130
11	P13SCSB0700R	DF077006	06/21/05	2249
12	DSTD 1.0 MG/ML	DSTD3	06/22/05	0247
13	DSTD4	DSTD4	06/26/05	1438
14	DSB10614	DSB10614	06/26/05	1517
15	DSB10614LCS	DSB10614LCS	06/26/05	1557
16	P13SCSB1110F	DF077002	06/26/05	1716
17	P13SCSB0700F	DF077003	06/26/05	1756
18	P13SCSB0705F	DF077004	06/26/05	1836
19	P13SCSB0710F	DF077005	06/26/05	1915
20	P13SCSB0710FMS	DF077005MS	06/26/05	1955
21	P13SCSB0710FMSD	DF077005MSD	06/26/05	2035
22	DSTD4	DSTD4	06/26/05	2234
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8D
SEMIVOLATILE ANALYTICAL SEQUENCE

Lab Name: COLUMBIA ANALYTICAL SERVICES - REDDING

Case No.: DF077 SDG No.: DF077

GC Column: RTX-5 ID: 0.53 (mm) ICAL Date(s): 07/06/05 07/06/05

Instrument ID: GCF

	CLIENT SAMPLE ID	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED
	=====	=====	=====	=====
01	DSTD1	DSTD1	07/06/05	1301
02	DSTD2	DSTD2	07/06/05	1341
03	DSTD3	DSTD3	07/06/05	1421
04	DSTD4	DSTD4	07/06/05	1501
05	DSTD5	DSTD5	07/06/05	1541
06	QCALTSTD	QCALTSTD	07/06/05	1625
07	P13SCSB1105F	DF077001	07/06/05	1705
08	DSTD3	DSTD3	07/07/05	0022
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AMENDMENT REPORT

Client: MACTEC INC.
Project: MACTEC/CAMP PARKS

Date: 8/9/2005
Batch: DF094
Tier: 3
Dept: CL SERV

E-Data: NOT REQUIRED
Initiated By: Douglas Burnett
Completed By: Douglas Burnett
Approved By: Douglas Burnett

A handwritten signature in black ink, appearing to read 'Douglas Burnett', is written over the 'Approved By' line.

REASON: Client Request

1. Amend case narrative to include comment about soil samples received in plastic sleeves rather than glass or metal
2. Amend case narrative to include comment on why Silica Gel cleanup was not performed.
3. Supply Chromatograms

COLUMBIA ANALYTICAL SERVICES, INC.

Client: MACTEC
Project: Camp Parks
Sample Matrix: Soil/Water

Service Request No.: DF094
Date Received: 6/8/05

CASE NARRATIVE

All analyses were performed consistent with the quality assurance program of Columbia Analytical Services, Inc. (CAS). This report contains analytical results for samples designated for Tier III validation deliverables.

Sample Receipt

Eleven water samples and two soil samples were received for analysis at Columbia Analytical Services on 6/8/05. The following discrepancy was noted upon initial sample inspection:

- Soil samples were received in plastic sleeves rather than glass or metal. Per instruction from the project manager on 6/6/05, proceed with analysis.
- One container was received unlabeled. This container was not used for analysis.

The samples were received in good condition and otherwise consistent with the accompanying chain of custody form. The samples were stored in a refrigerator at 4°C upon receipt at the laboratory.

Diesel Range Organics by EPA Method 8015B

Elevated Method Reporting Limits:

Samples P13SCGW13F, P13SCGW13D, P13SCGW10F, P13SCGW11F, and P13SCGW14F required a dilution due to the presence of elevated levels of Diesel Range Organics and/or the nature of the matrix. The reporting limits are adjusted to reflect the dilution.

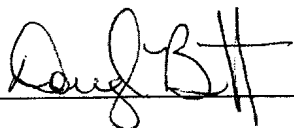
Surrogate Exceptions:

The control criteria for the following surrogates in samples P13SCGW1111F and P13SCGW13F are not applicable: Triacontane and Octacosane. The analysis of the sample required a dilution, which resulted in a surrogate concentration below the Method Reporting Limit (MRL).

General Discussion and Notes:

In order to have consistent preparation techniques through the life of the project, silica gel cleanup was not performed during preparation of these samples as requested in the QAPP. Samples were received into the laboratory on 6/8/05, then prepared on 6/21/05; QAPP was received by CAS on 6/14/05.

Approved by: _____



Date: _____

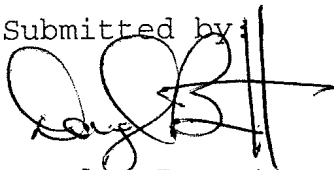
8-5-05

David Browne
MACTEC Inc.
5341 Old Redwood Highway
Suite 300
Petaluma, CA 94954

Columbia Analytical Services Report
Camp Parks Dublin
DF050094/DF094
37868

July 11, 2005

Submitted by:



Douglas Burnett
Project Manager/Client Services

The test results provided in this data package meet the requirements of the NELAC Standards unless noted in the case narrative report.

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Level III

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Current CAS Redding Accreditation Programs

Federal and National Programs

- U.S Air Force, Air Force Center for Environmental Excellence (AFCEE)
Approved laboratory for Wastewater and Hazardous Waste
- U.S. Army Corps of Engineers – MRD, HTRW Mandatory Center of Expertise
Validated for Wastewater and Hazardous Waste
- Department of the Navy, Naval Facilities Engineering Service Center (NFESC)
Approved laboratory for Wastewater and Hazardous Waste

State and Local Programs

- State of Arizona, Department of Health Services
Approved laboratory for Hazardous Waste
Lab ID# AZ0604
- State of Arkansas, Department of Environmental Quality
Approved laboratory for Wastewater and Hazardous Waste
Lab ID# None
- State of California, Department of Health Services, National Environmental Laboratory Accreditation Program (NELAP)
Approved laboratory for Drinking Water, Wastewater and Hazardous Waste
Lab ID# 01105CA
 - Los Angeles County Sanitation District
Approved laboratory for Wastewater
Lab ID# 10243
- State of Florida, Department of Health (NELAP)
Approved Environmental Testing Laboratory for Wastewater and Hazardous Waste
Lab ID# E87203
- State of Kansas, Department of Health and Environment (NELAP)
Approved laboratory for Hazardous Waste
Lab ID# E-10323
- State of Massachusetts, Department of Environmental Protection
Approved laboratory for Drinking Water, Wastewater
Lab ID# M-CA025
- State of Oklahoma, Department of Environmental Quality
Approved laboratory for General Water Quality/Sludge Testing
Lab ID# 9952
- State of Oregon, Department of Human Resources, Health Division (ORELAP)
Approved laboratory for Drinking Water, Wastewater, and Hazardous Waste
Lab ID# CA200004
- State of Utah, Department of Health, Division of Laboratory Services (NELAP)
Approved laboratory for Wastewater and Hazardous Waste
Lab ID# QUAL1
- State of Washington, Department of Ecology, Environmental Laboratory Accreditation Program
Approved laboratory for Wastewater and Hazardous Waste
Lab ID# C037
- State of Wisconsin, Department of Ecology
Approved laboratory for Wastewater and Hazardous Waste
Lab ID# 999767340

Organic Data Qualifiers

- A -- This qualifier indicates that a TIC is a suspected aldol-condensation product
- B -- This flag is used when the analyte is found in the associated blank as well as the sample. This notation indicates possible blank contamination and suggests that the data user evaluate these compounds and their amounts carefully.
- C -- The "C" flag indicates the presence of this compound has been confirmed by the GC/MS analysis.
- D -- This qualifier is used for all the compounds identified in an analysis at a secondary dilution factor. "D" qualifiers are used only for the samples reported at more than one dilution factor.
- E -- This flag indicates that the value reported exceeds the linear calibration range for that compound. Therefore, the sample should be reanalyzed at the appropriate dilution. The "E" qualified amount is an estimated concentration, and the results of the dilution will be reported on a separate Form I.
- I -- The qualifier indicates that the reporting limit to the "I" qualifier has been raised. It is used when the chromatographic interference prohibits detection of a compound at a level below the concentration expressed on the Form I.
- J -- Indicates an estimated value. It is used when the data indicates the presence of a target compound below the reporting limit or the presence of a Tentatively Identified Compound (TIC).
- N -- This qualifier indicates presumptive evidence of a compound. This flag is only used for Tentatively Identified Compounds (TIC), where the identification is based on a mass spectral library research. It is applied to all TIC results. For generic characterization of a TIC, such as chlorinated hydrocarbon, the "N" qualifier is not used.
- P -- This qualifier is used for target analytes when there is a greater than 40% difference for detected concentrations between the two columns or detectors. The concentration value is reported on Form I and flagged with a "P".
- U -- Indicates the compound was analyzed for but not detected. The number adjacent to the "U" qualifier indicates the reporting limit for that compound. The reporting limit can vary from sample to sample depending on dilution factors or percent moisture adjustments when indicated.

Organic Sample ID Qualifiers

The qualifiers that may be appended to the Lab Sample ID and/or the Client Sample ID for organic analysis are defined below:

- DL -- Diluted reanalysis. Indicates that the results were determined in an analysis of a secondary dilution of a sample or extract. A digit to indicate multiple dilutions of the sample or extract may follow the "DL" suffix. The results of more than one diluted reanalysis may be reported.
- MS -- Matrix spike (may be followed by a digit to indicate multiple matrix spikes within a sample set).
- MSD -- Matrix spike duplicate (may be followed by a digit to indicate multiple matrix spikes within a sample set).
- R -- Reanalysis. The extract was reanalyzed without re-extraction. The "R" is not used if the sample was also re-extracted. May be followed by a digit to indicate multiple reanalysis of the sample at the same dilution.
- RE -- Re-extraction analysis. The sample was re-extracted and reanalyzed. May be followed by a digit to indicate multiple re-extracted analysis of the same sample at the same dilution.

Sample ID Cross-reference Table

CAS Lab Sample ID	Client Sample ID	Receive Date	Collect Date	Sample Matrix	Additional Description
FS = Field Sample; MS = Matrix Spike; MSD = Matrix Spike Duplicate; NON = Non-Sample Type (Internal Admin)					
DF094001	FS P13SCGW01F	06/08/05	06/06/05	16:20	Water
DF094002	FS P13SCGW13F	06/08/05	06/07/05	08:00	Water
DF094003	FS P13SCGW13D	06/08/05	06/07/05	08:00	Water
DF094004	FS P13SCGW10F	06/08/05	06/07/05	08:45	Water
DF094005	FS P13SCGW11F	06/08/05	06/07/05	09:35	Water
DF094006	FS P13SCGW12F	06/08/05	06/07/05	10:05	Water
DF094007	FS P13SCGW15F	06/08/05	06/07/05	10:55	Water
DF094008	FS P13SCGW14F	06/08/05	06/07/05	13:15	Water
DF094009	FS P13SCGW1408F	06/08/05	06/07/05	13:25	Soil
DF094010	FS P13SCGW16F	06/08/05	06/07/05	13:40	Water
DF094011	FS P13SCGW07F	06/08/05	06/07/05	15:10	Water
DF094012	FS P13SCGW1111F	06/08/05	06/07/05	16:25	Soil
DF094013	FS P13SCGW1111R	06/08/05	06/07/05	16:40	Water

The above lab sample ID's and cross reference information apply to samples as received by the laboratory. Modifiers to the lab sample ID may be added for internal tracking purposes. Any modified sample ID will be reflected in the appropriate case narrative only.

CASE NARRATIVE

COLUMBIA ANALYTICAL SERVICES, INC.

Client: MACTEC
Project: Camp Parks
Sample Matrix: Soil/Water

Service Request No.: DF094
Date Received: 6/8/05

CASE NARRATIVE

All analyses were performed consistent with the quality assurance program of Columbia Analytical Services, Inc. (CAS). This report contains analytical results for samples designated for Tier III validation deliverables.

Sample Receipt

Eleven water samples and two soil samples were received for analysis at Columbia Analytical Services on 6/8/05. No discrepancies were noted upon initial sample inspection. The samples were received in good condition and consistent with the accompanying chain of custody form. The samples were stored in a refrigerator at 4°C upon receipt at the laboratory.

Diesel Range Organics by EPA Method 8015B

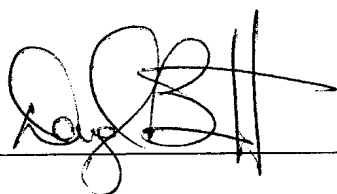
Elevated Method Reporting Limits:

Samples P13SCGW13F, P13SCGW13D, P13SCGW10F, P13SCGW11F, and P13SCGW14F required a dilution due to the presence of elevated levels of Diesel Range Organics and/or the nature of the matrix. The reporting limits are adjusted to reflect the dilution.

Surrogate Exceptions:

The control criteria for the following surrogates in samples P13SCGW1111F and P13SCGW13F are not applicable: Triacotane and Octacosane. The analysis of the sample required a dilution, which resulted in a surrogate concentration below the Method Reporting Limit (MRL).

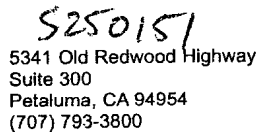
Approved by: _____



Date: _____

7-11-05

CHAIN OF CUSTODY DOCUMENTATION



Samplers: David Brown
Scott Trulock

Seq. No.: No 1115

Lab: Columbus
DI-094

Name/Location: CAMP PARKS Dublin Ca

Project Manager: Beth Flynn

Recorder: David Leone
(Signature Required)

MATRIX				# CONTAINERS & PRESERV.				SAMPLE NUMBER				DATE					
Water	Soil	Air		Unpres.	H2SO4	HNO3	HCL			YR	SEQ			YR	MO	DAY	TIME
X				2						P13	SCGW01	F		05	06	06	1620
X				2						P13	SCGW13	F		05	06	07	0800
X				2						P13	SCGW13	D		05	06	07	0800
X				2						P13	SCGW10	F		05	06	07	0845
X				2						P13	SCGW11	F		05	06	07	0935
X				2						P13	SCGW12	F		05	06	07	1005
X				2						P13	SCGW15	F		05	06	07	1055
X				2						P13	SCGW14	F		05	06	07	1315
	X			1						P13	SCGW14	08F		05	06	07	1325
X				2						P13	SCGW16	F		05	06	07	1340

[illegible]

ANALYSIS REQUESTED															
TPE d															
X										CASE ID #	1				
X											2				
X											3				
X											4				
X											5				
X											6				
X											7				
X											8				
X											9				
X											10				

[illegible]

CHAIN OF CUSTODY RECORD			
Relinquished By (Signature)	(Print Name)	(Company)	Date/Time
<i>David Browne</i>	David Browne	MADEC	6/7/05
Received By (Signature)	(Print Name)	(Company)	Date/Time
<i>[Signature]</i>	P.BINS	CAS	6/07/05 1655
Relinquished By (Signature)	(Print Name)	(Company)	Date/Time
<i>[Signature]</i>	P.BINS	CAS	6/07/05 1750 VIA FedEx
Received By (Signature)	(Print Name)	(Company)	Date/Time
<i>[Signature]</i>	SAUCHEL	CAS/EDD	6/8/05 0945
Relinquished By (Signature)	(Print Name)	(Company)	Date/Time
Received By (Signature)	(Print Name)	(Company)	Date/Time
Method of Shipment:			

5250157

5341 Old Redwood Highway
Suite 300
Petaluma, CA 94954
(707) 793-3800

CHAIN OF CUSTODY FORM

Samplers: David Browne/Scott Tucker

Seq. No.: No 1118

Lab: Columbina

DF094 2022

Job Number: 3618040128.02

Name/Location: Camp Parks

Project Manager: Beth Flynn

Recorder: David Brown
(Signature Required)

[illegible][illegible][illegible][illegible]

CHAIN OF CUSTODY RECORD				
Relinquished By (Signature)	(Print Name)	(Company)	Date/Time	
<i>David Browne</i>	David Browne	MBCTEE	4/7/05	
Received By (Signature)	(Print Name)	(Company)	Date/Time	
<i>P. Bins</i>	P. BINS	CAS	6/07/05 1655	
Relinquished By (Signature)	(Print Name)	(Company)	Date/Time	
<i>P. Bins</i>	P. BINS	CAS	6/07/05 1750 VIA FedEx	
Received By (Signature)	(Print Name)	(Company)	Date/Time	
<i>P. Sanchez</i>	SANCHEZ	CAS/ROD	4/8/05 0945	
Relinquished By (Signature)	(Print Name)	(Company)	Date/Time	
Received By (Signature)	(Print Name)	(Company)	Date/Time	
Method of Shipment:				

COOLER RECEIPT FORM

Project/Client: MAC TBC / DUBLIN Batch No.: DF094
1. Cooler(s)/Sample(s) received on: 6/8/05 Shipped via: FX
Shipping Bill # (s): 8358 1545 1172 # of Coolers/Packages 2
2. Radiological Screening by: [Signature] Acceptable YES Rejected NO
3. Custody seals on outside of cooler: If yes, where? Front ✓ Rear Lt Side Rt Side YES YES NO NO N/A N/A
Seals intact: YES NO NO

COOLER/SAMPLE PROCESSING

4. Sample Processing/Tagging by: J Campbell
5. Cooler(s)/Sample(s) Temp's: 20C 30C (or) Temp. Blank (if included):
6. Type of packing material (circle): Ice Blue Ice Bubble Wrap Bubble Bags Zip Locks Webbing
Other:
7. Custody papers properly filled out (ink, signed, dated, released, etc.)? YES NO
8. Containers arrived in good condition (not broken, leaking, etc.)? YES NO
9. Samples received with adequate holding time remaining to conduct analysis? YES NO
10. Container labels complete (i.e. analysis, preservation, date/time, etc.)? YES NO
11. Container labels and tags agree with custody papers? YES NO
12. Correct types of containers used for the tests indicated? YES NO
a.) Adequate sample received? If not, note on Exception Report. YES NO
13. Containers supplied by: CAS Other N/A
14. Preserved containers received with the appropriate preservative? YES NO N/A
pH: (or) See pH log.
15. VOA vials free of air bubbles? YES NO N/A
16. Trip Blank preparation date: CAS Other N/A
17. Volatile Soil samples: Encores or Plugs in Vials
Freezer or GC/MS Date: Time: N/A

See Exception Report for discrepancies.

SAMPLE RECEIPT EXCEPTION REPORT

Sample Batch #: DF094 Client/Project: MACTEC/DUBLIN

1 Holding Time Issues	2 Temperature Issues	3 COC/Label Issues	4 Container Issues	5 Other
--------------------------	-------------------------	-----------------------	-----------------------	------------

*Q. 1 container received with no label. All other containers
match COC for number of containers*

Corrective Actions Taken

OK. @ 6-9-05

Initiated By:

J Campbell
Date: *6/8/05*

Client: _____

Client Notification By: _____

Date: _____

GC TPH DIESEL

Sample data

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT ID.

P13SCGW01F

Lab Name: COLUMBIA ANALYTICAL SERVICES - REDDING

Case No.: SDG No.: DF094

Lab Sample ID: DF094001

Matrix: WATER Level: LOW

Lab File ID: F0706026

Sample Wt/Vol: 0.990 L

Date Collected: 06/06/05

Extract Vol: 1 ML

Date Extracted: 06/13/05

Date Analyzed: 07/07/05

Extraction Type: SEP FUNNEL

Dilution Factor: 1.0

CAS NO.	COMPOUND	Units: mg/L	MDL	RL	RESULT	Q
	PHCC10C24---TPH-DIESEL (C10-C24)		0.018	0.10	0.060	J

Data File: \\redding3\acqui\Target\Chem\GCF.i\F0050706\F0706026.D

Page 3

Date : 07-JUL-2005 04:21

Client ID: P13SCGW01F

Sample Info: DF094001

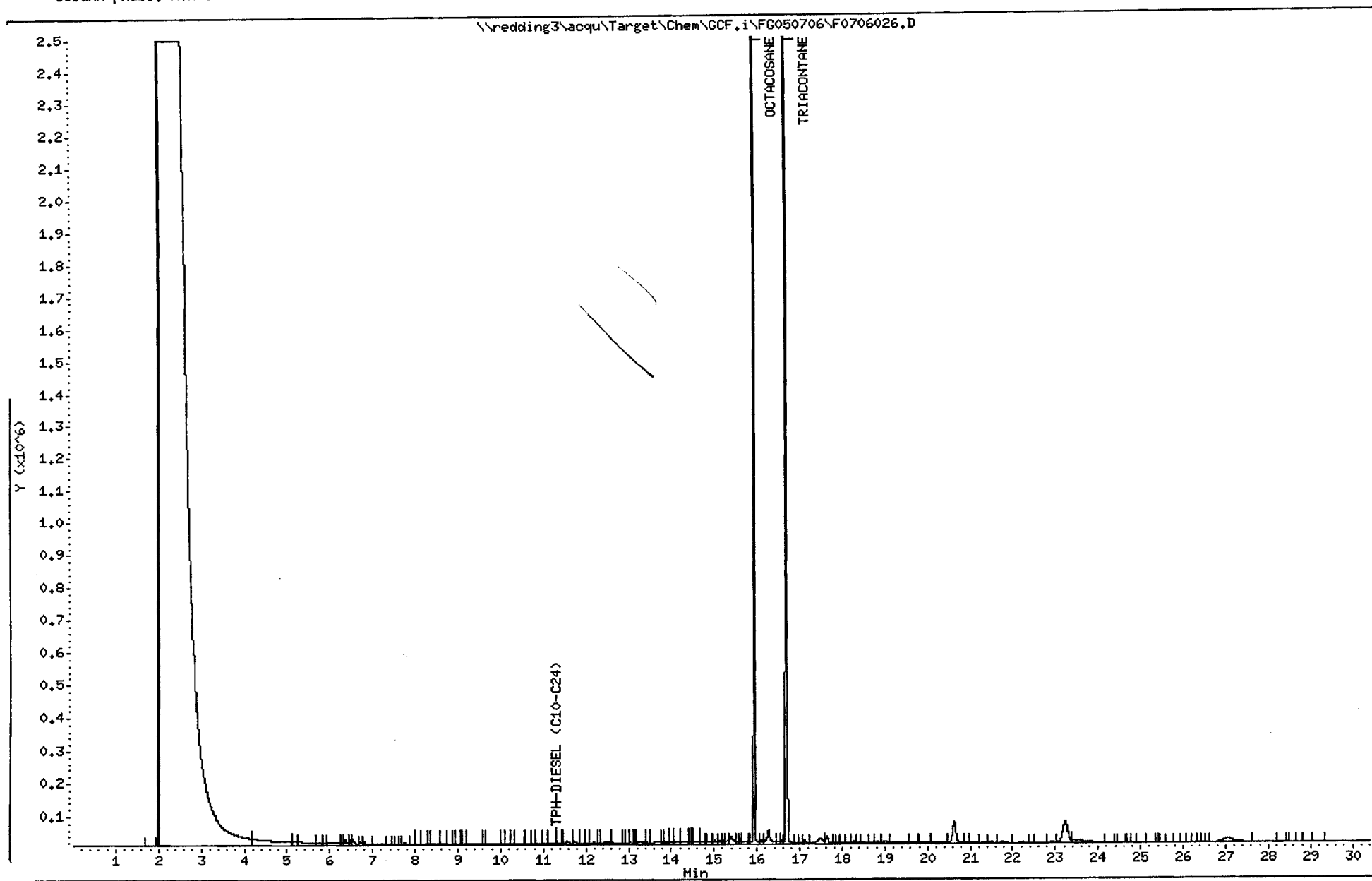
Purge Volume: 1.0

Column phase: RTX-5

Instrument: GCF.i

Operator:

Column diameter: 0.53



1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT ID.

P13SCGW13F

Lab Name: COLUMBIA ANALYTICAL SERVICES - REDDING

Case No.: SDG No.: DF094

Lab Sample ID: DF094002

Matrix: WATER Level: LOW

Lab File ID: G0707009

Sample Wt/Vol: 1.050 L

Date Collected: 06/07/05

Extract Vol: 1 ML

Date Extracted: 06/13/05

Date Analyzed: 07/07/05

Extraction Type: SEP FUNNEL

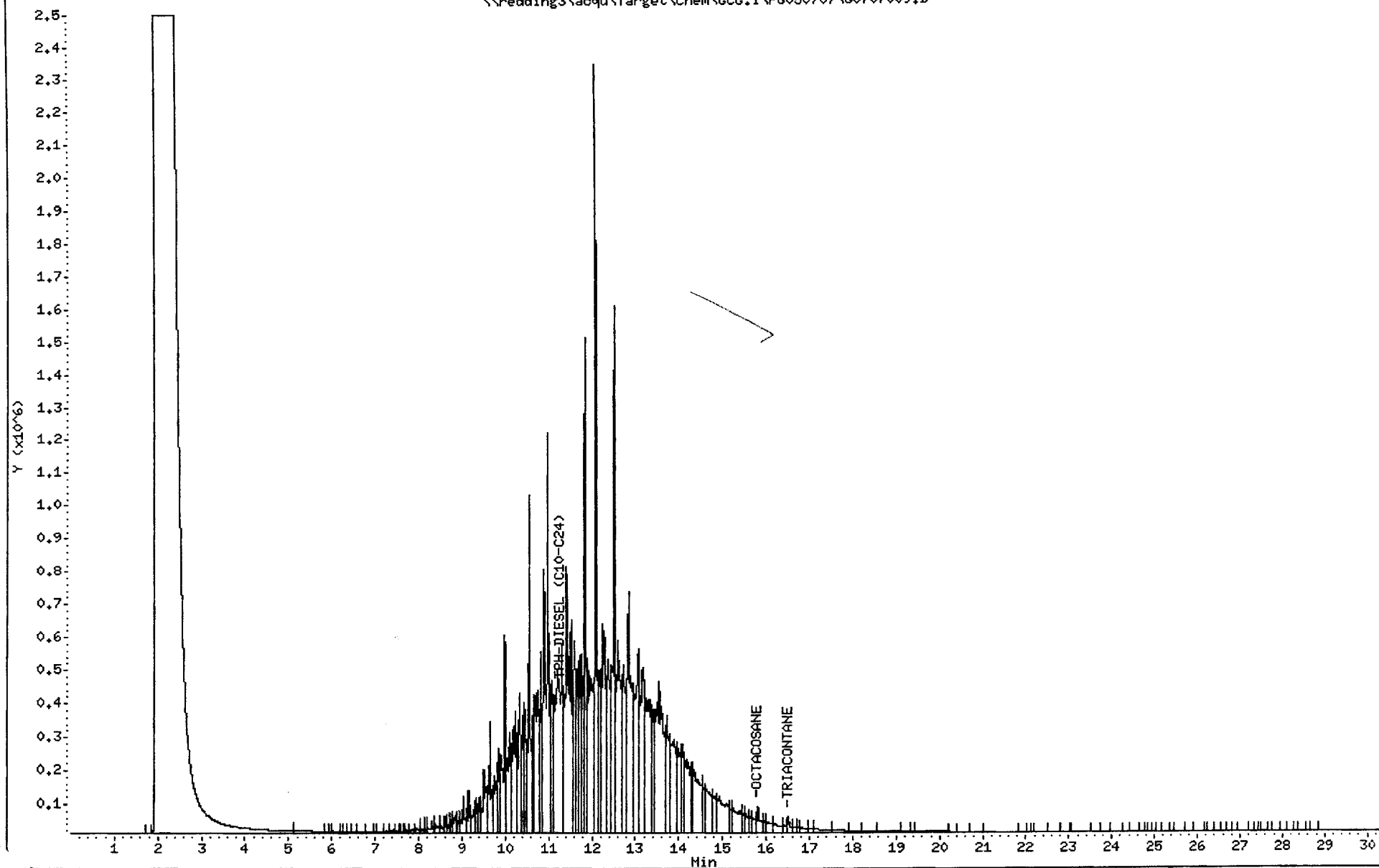
Dilution Factor: 200.0

CAS NO.	COMPOUND	Units: mg/L	MDL	RL	RESULT	Q
PHCC10C24---	TPH-DIESEL (C10-C24)		3.6	19	650	

Data File: \\redding3\acq
Date : 07-JUL-2005 15:20
Client ID: P13SCGM13F
Sample Info: DF094002
Purge Volume: 1.1
Column phase: RTX-5

Instrument: GCG.i
Operator:
Column diameter: 0.53

\\redding3\acq\Target\Chem\GCG.i\FG050707\G0707009.D



1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT ID.

P13SCGW13D

Lab Name: COLUMBIA ANALYTICAL SERVICES - REDDING

Case No.: SDG No.: DF094

Lab Sample ID: DF094003

Matrix: WATER Level: LOW

Lab File ID: G0707005

Sample Wt/Vol: 0.990 L

Date Collected: 06/07/05

Extract Vol: 1 ML

Date Extracted: 06/13/05

Date Analyzed: 07/07/05

Extraction Type: SEP FUNNEL

Dilution Factor: 5.0

CAS NO.	COMPOUND	Units: mg/L	MDL	RL	RESULT	Q
PHCC10C24	---TPH-DIESEL (C10-C24)		0.091	0.50	15	

Data File: \\redding3\acqu\Target\Chem\GCC.i\FG050707\G0707005.D

Page 3

Date : 07-JUL-2005 12:40

Client ID: P13SCGW13D

Sample Info: DF094003

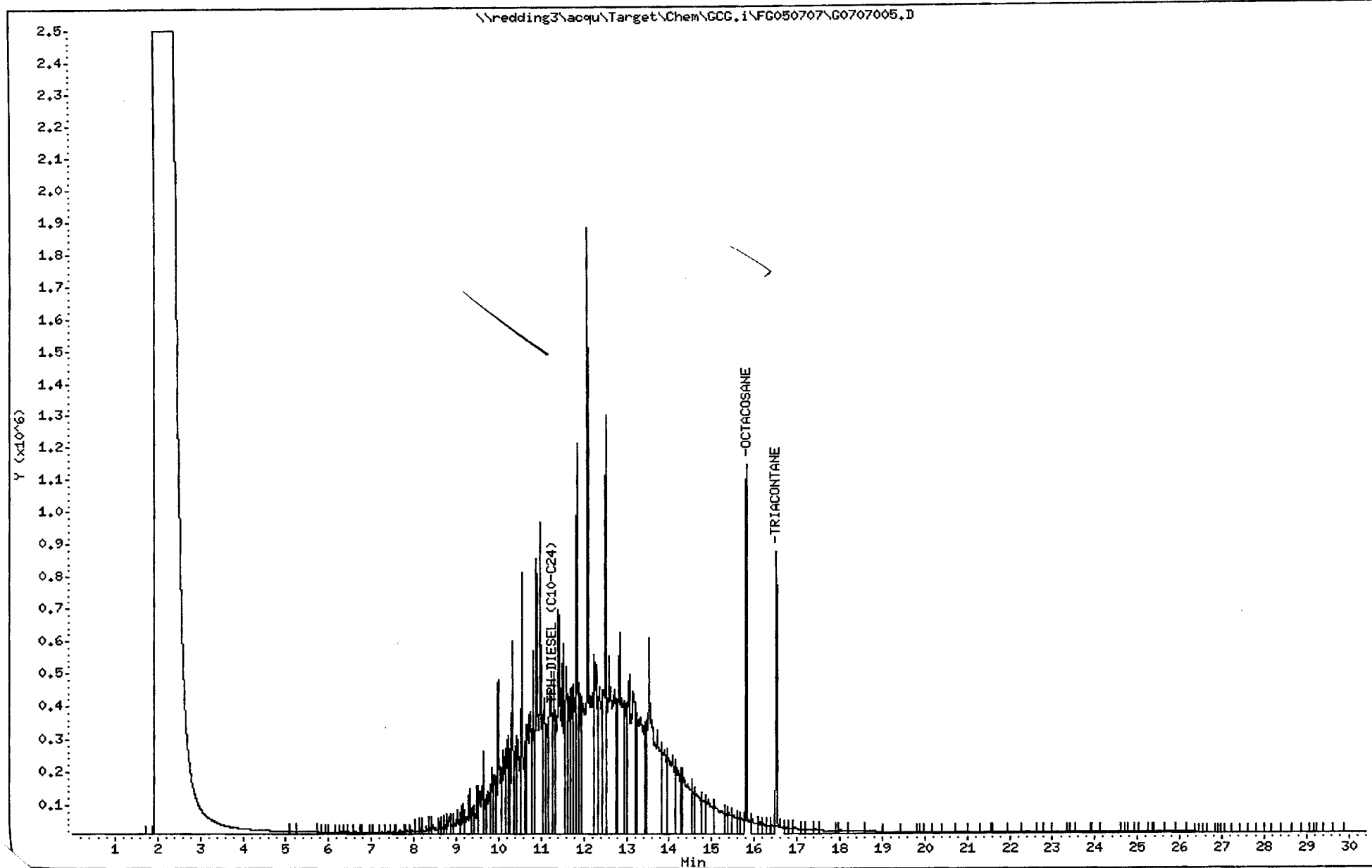
Purge Volume: 1.0

Column phase: RTX-5

Instrument: GCC.i

Operator:

Column diameter: 0.53



1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT ID.

P13SCGW10F

Lab Name: COLUMBIA ANALYTICAL SERVICES - REDDING

Case No.: SDG No.: DF094

Lab Sample ID: DF094004

Matrix: WATER Level: LOW

Lab File ID: G0707008

Sample Wt/Vol: 1.000 L

Date Collected: 06/07/05

Extract Vol: 1 ML

Date Extracted: 06/13/05

Date Analyzed: 07/07/05

Extraction Type: SEP FUNNEL

Dilution Factor: 10.0

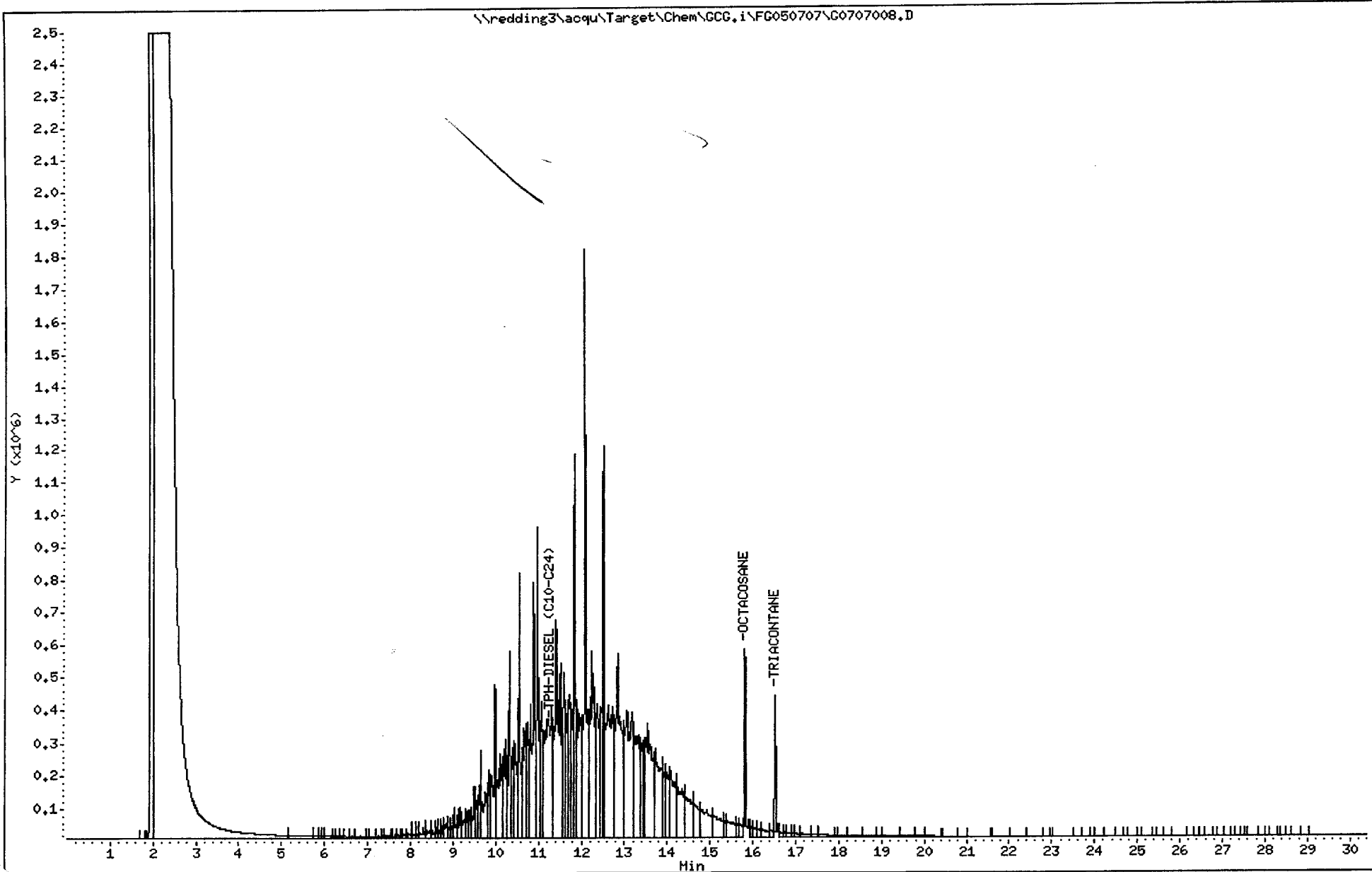
CAS NO.	COMPOUND	Units: mg/L	MDL	RL	RESULT	Q
PHCC10C24---	TPH-DIESEL (C10-C24)		0.18	1.0	27	

Data File: \\redding3\acqu\Target\Chem\GCC.i\FG050707\G0707008.D
Date : 07-JUL-2005 14:40
Client ID: P13SCGW10F
Sample Info: DF094004
Purge Volume: 1.0
Column phase: RTX-5

Instrument: GCC.i

Operator:

Column diameter: 0.53



1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT ID.

P13SCGW11F

Lab Name: COLUMBIA ANALYTICAL SERVICES - REDDING

Case No.: SDG No.: DF094

Lab Sample ID: DF094005

Matrix: WATER Level: LOW

Lab File ID: G0707007

Sample Wt/Vol: 1.020 L

Date Collected: 06/07/05

Extract Vol: 1 ML

Date Extracted: 06/13/05

Date Analyzed: 07/07/05

Extraction Type: SEP FUNNEL

Dilution Factor: 10.0

CAS NO.	COMPOUND	Units: mg/L	MDL	RL	RESULT	Q
---------	----------	-------------	-----	----	--------	---

PHCC10C24---TPH-DIESEL (C10-C24)						
----------------------------------	--	--	--	--	--	--

0.18

0.98

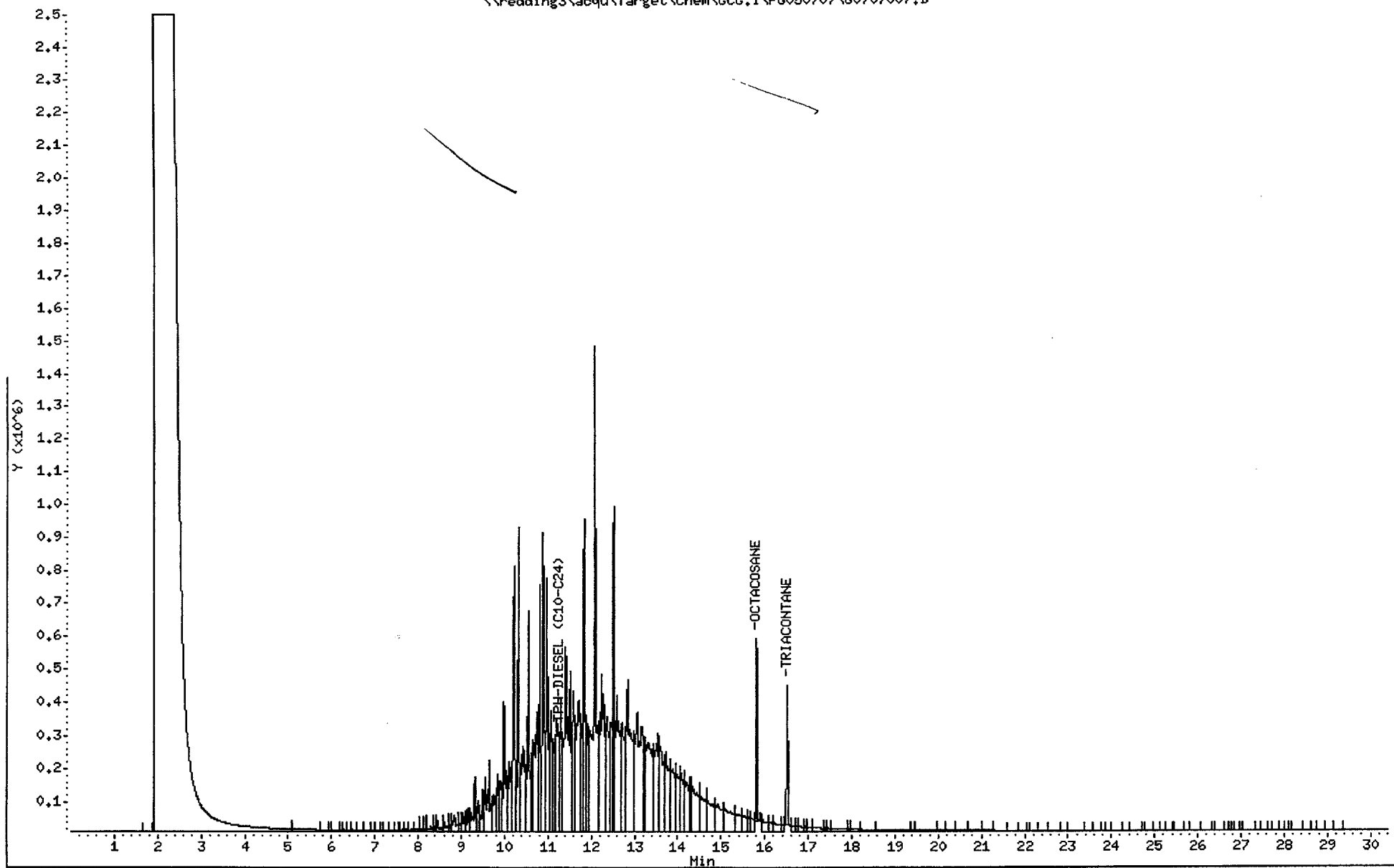
24

Data File: \\redding3\acq
Date : 07-JUL-2005 14:00
Client ID: P13SCGW11F
Sample Info: DF094005
Purge Volume: 1.0
Column phase: RTX-5

Page 3

Instrument: GCG.i
Operator: .
Column diameter: 0.53

\\redding3\acq\Target\Chem\GCG.i\FG050707\G0707007.D



1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT ID.

P13SCGW12F

Lab Name: COLUMBIA ANALYTICAL SERVICES - REDDING

Case No.: SDG No.: DF094

Lab Sample ID: DF094006

Matrix: WATER Level: LOW

Lab File ID: G0706022

Sample Wt/Vol: 1.000 L

Date Collected: 06/07/05

Extract Vol: 1 ML

Date Extracted: 06/13/05

Date Analyzed: 07/07/05

Extraction Type: SEP FUNNEL

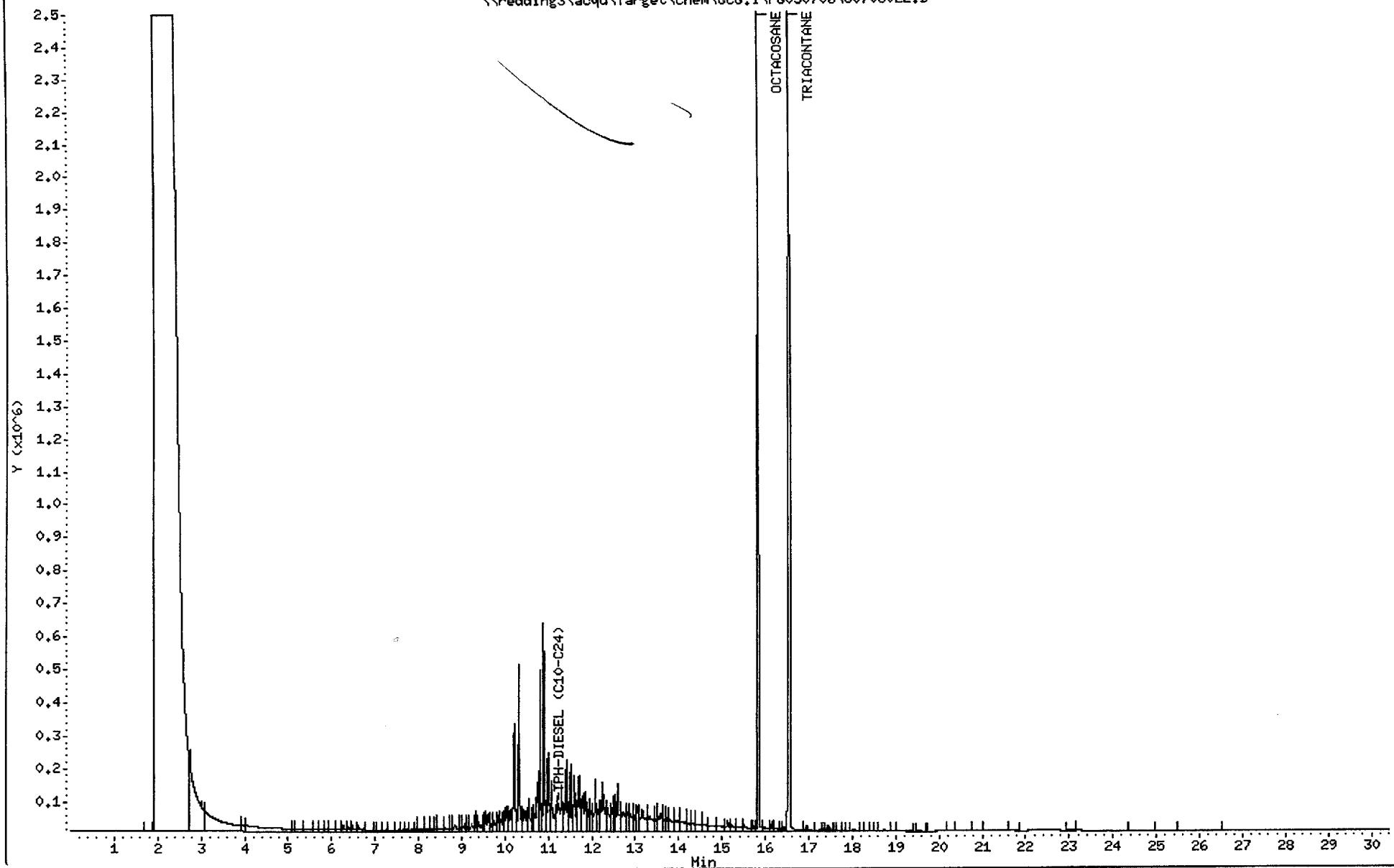
Dilution Factor: 1.0

CAS NO.	COMPOUND	Units: mg/L	MDL	RL	RESULT	Q
PHCC10C24---	TPH-DIESEL (C10-C24)		0.018	0.10	0.55	

Data File: \\redding3\acq
Date : 07-JUL-2005 01:42
Client ID: P13SCGM12F
Sample Info: DF094006
Purge Volume: 1.0
Column phase: RTX-5

Instrument: GCG.i
Operator: .
Column diameter: 0.53

\\redding3\acq\Target\Chem\GCG.i\FC050706\G0706022.D



1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT ID.

P13SCGW15F

Lab Name: COLUMBIA ANALYTICAL SERVICES - REDDING

Case No.: SDG No.: DF094

Lab Sample ID: DF094007

Matrix: WATER Level: LOW

Lab File ID: G0706023

Sample Wt/Vol: 1.030 L

Date Collected: 06/07/05

Extract Vol: 1 ML

Date Extracted: 06/13/05

Date Analyzed: 07/07/05

Extraction Type: SEP FUNNEL

Dilution Factor: 1.0

CAS NO.	COMPOUND	Units: mg/L	MDL	RL	RESULT	Q
PHCC10C24---	TPH-DIESEL (C10-C24)		0.018	0.10	0.11	

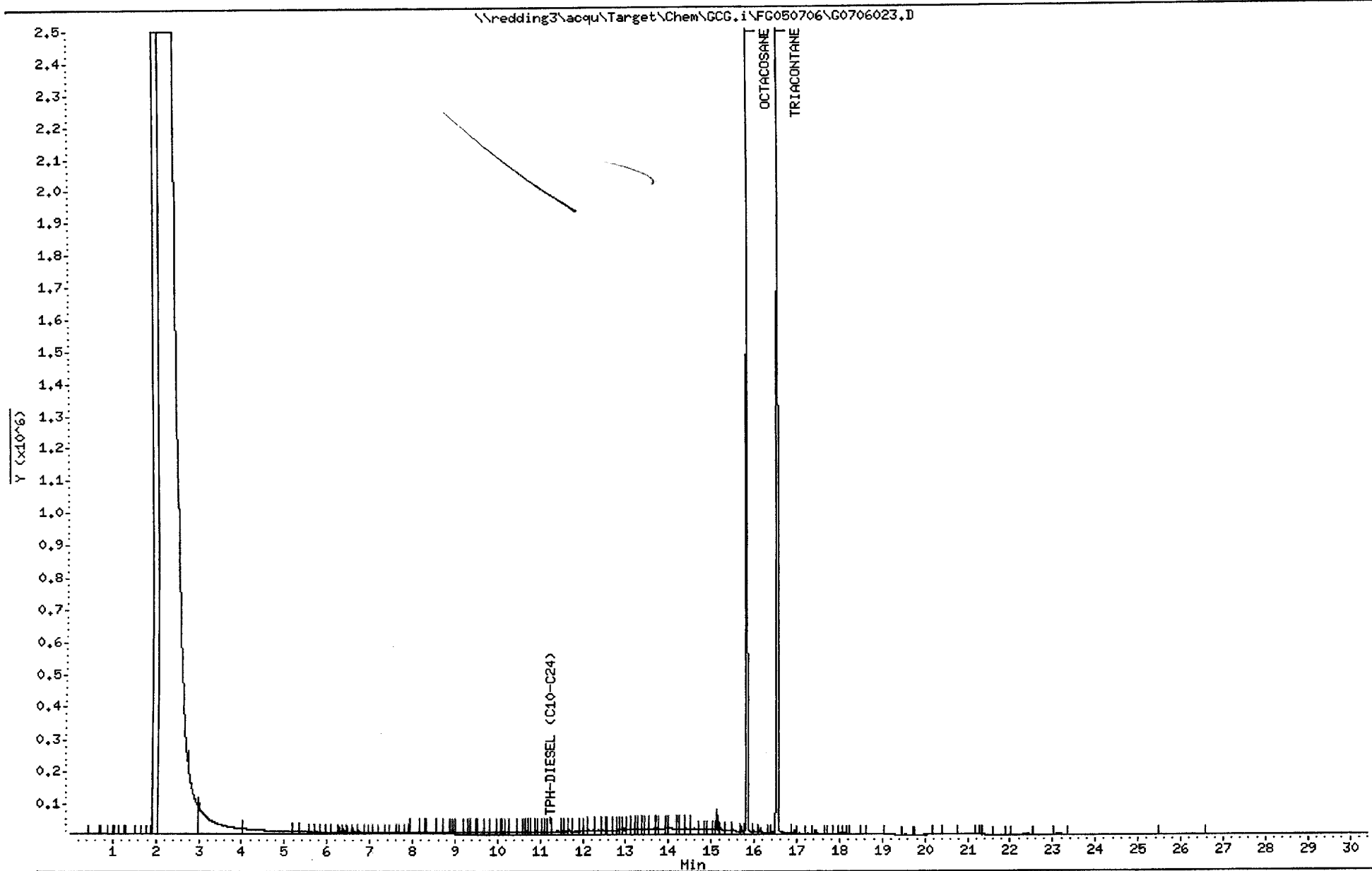
Data File: \\redding3\acq\Target\Chem\GCG.i\FG050706\G0706023.D
Date : 07-JUL-2005 02:22
Client ID: P13SCGW15F
Sample Info: DF094007
Purge Volume: 1.0
Column phase: RTX-5

Instrument: GCG.i

Operator:

Column diameter: 0.53

Page 3



1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT ID.

P13SCGW14F

Lab Name: COLUMBIA ANALYTICAL SERVICES - REDDING

Case No.: SDG No.: DF094

Lab Sample ID: DF094008

Matrix: WATER Level: LOW

Lab File ID: G0707006

Sample Wt/Vol: 1.000 L

Date Collected: 06/07/05

Extract Vol: 1 ML

Date Extracted: 06/13/05

Date Analyzed: 07/07/05

Extraction Type: SEP FUNNEL

Dilution Factor: 10.0

CAS NO.	COMPOUND	Units: mg/L	MDL	RL	RESULT	Q
	PHCC10C24---TPH-DIESEL (C10-C24)		0.18	1.0	13	

Data File: \\redding3\acq\Target\Chem\GCG.i\FG050707\G0707006.D

Page 3

Date : 07-JUL-2005 13:20

Client ID: P13SCGM14F

Sample Info: DF094008

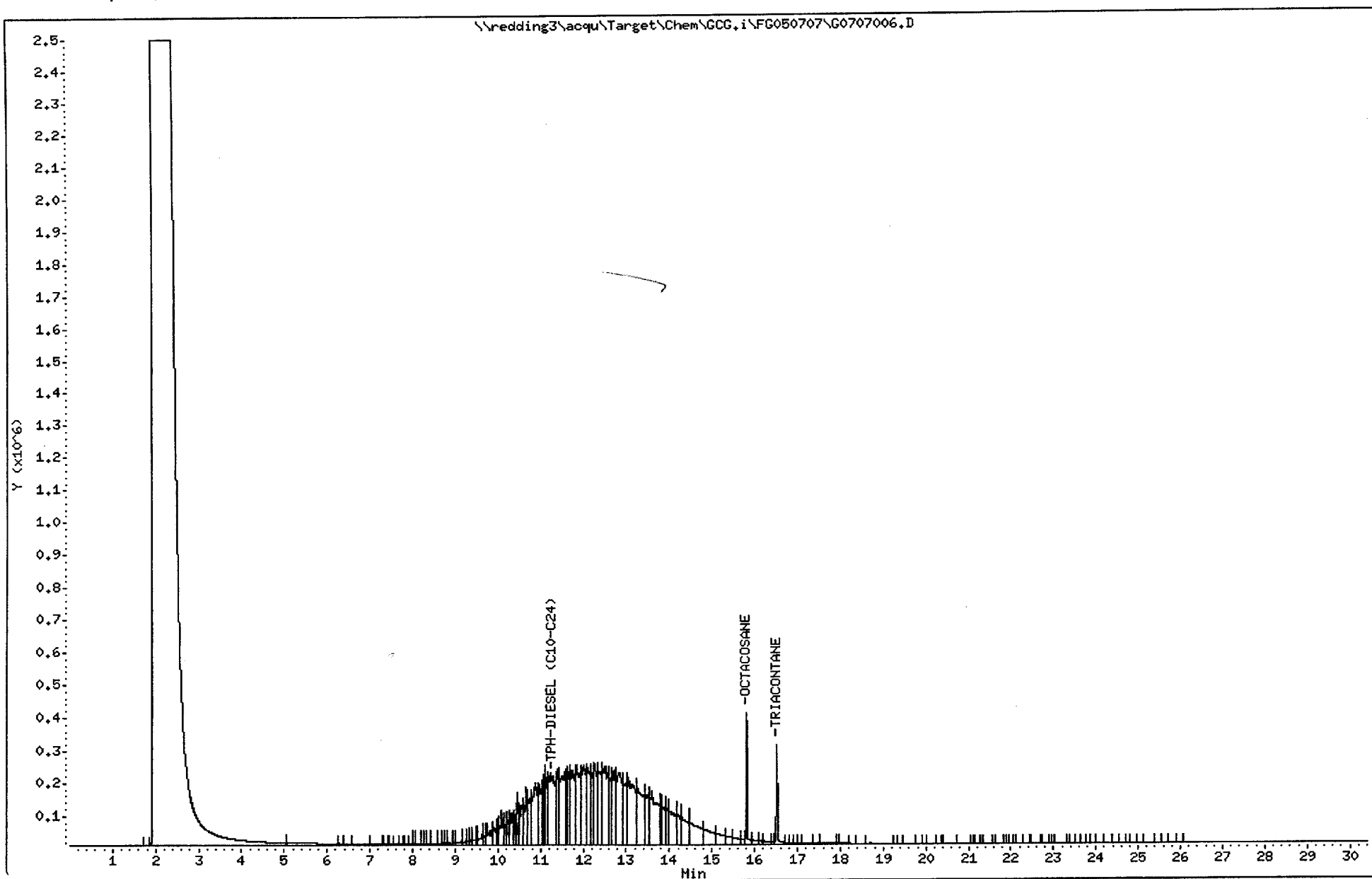
Purge Volume: 1.0

Column phase: RTX-5

Instrument: GCG.i

Operator:

Column diameter: 0.53



1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT ID.

P13SCGW1408F

Lab Name: COLUMBIA ANALYTICAL SERVICES - REDDING

Case No.: SDG No.: DF094

Lab Sample ID: DF094009

Matrix: SOIL Level: LOW

Lab File ID: F0707012

Sample Wt/Vol: 49.4 G

Date Collected: 06/07/05

Extract Vol: 1 ML

Date Extracted: 06/21/05

% Moisture: not dec. 21

Date Analyzed: 07/07/05

Extraction Type: SONICATION

Dilution Factor: 1.0

CAS NO.	COMPOUND	Units: mg/Kg	MDL	RL	RESULT	Q
	PHCC10C24---TPH-DIESEL (C10-C24)		0.81	13	5.3	J

Data File: \\redding3\acq\Target\Chem\GCF.i\FG050707\F0707012.D

Page 3

Date : 07-JUL-2005 17:20

Client ID: P13SCGM1408F

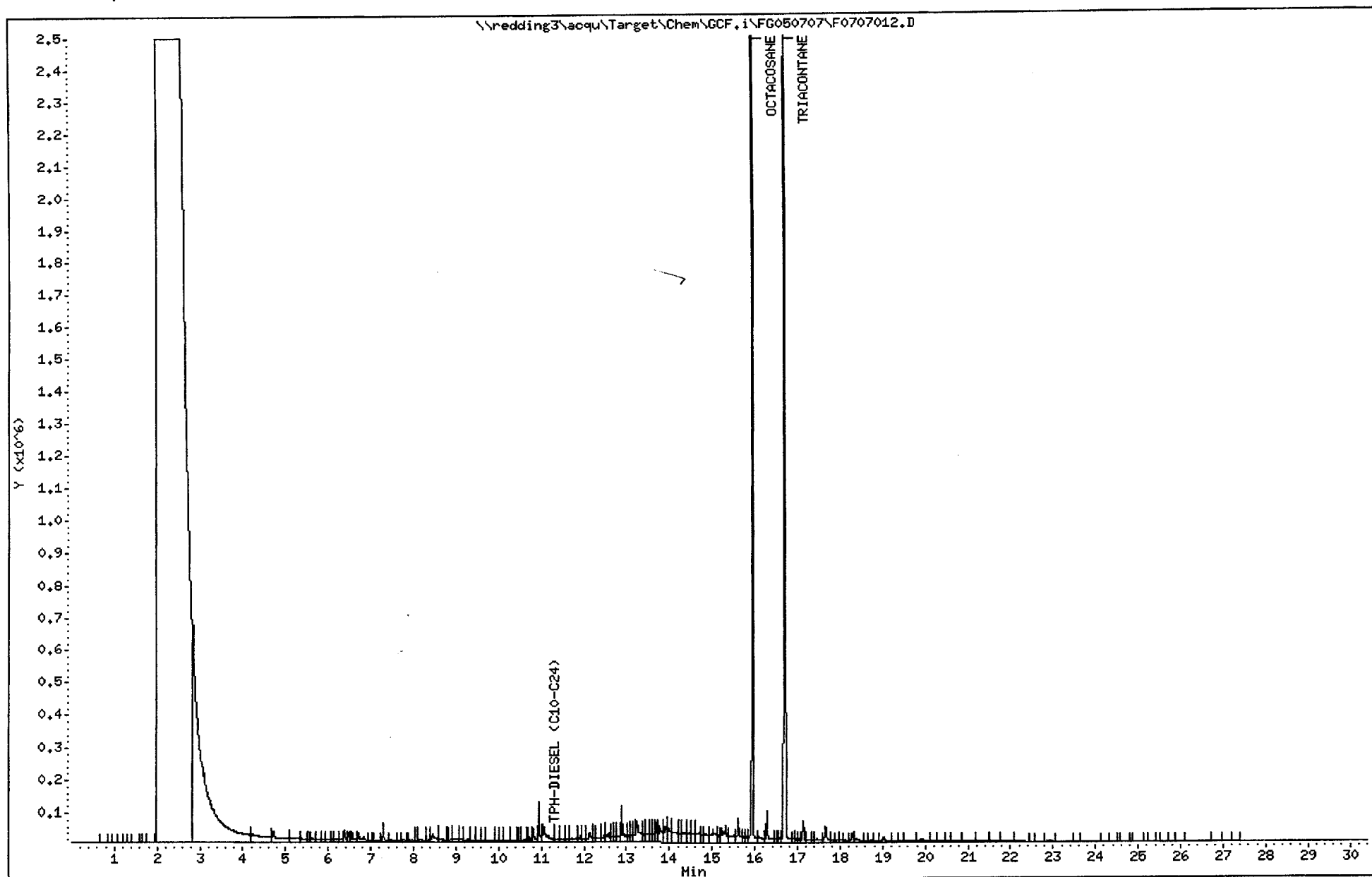
Sample Info: DF094009

Instrument: GCF.i

Operator:

Column diameter: 0.53

Column phase: RTX-5



1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT ID.

P13SCGW16F

Lab Name: COLUMBIA ANALYTICAL SERVICES - REDDING

Case No.: SDG No.: DF094

Lab Sample ID: DF094010

Matrix: WATER Level: LOW

Lab File ID: G0706025

Sample Wt/Vol: 1.010 L

Date Collected: 06/07/05

Extract Vol: 1 ML

Date Extracted: 06/13/05

Date Analyzed: 07/07/05

Extraction Type: SEP FUNNEL

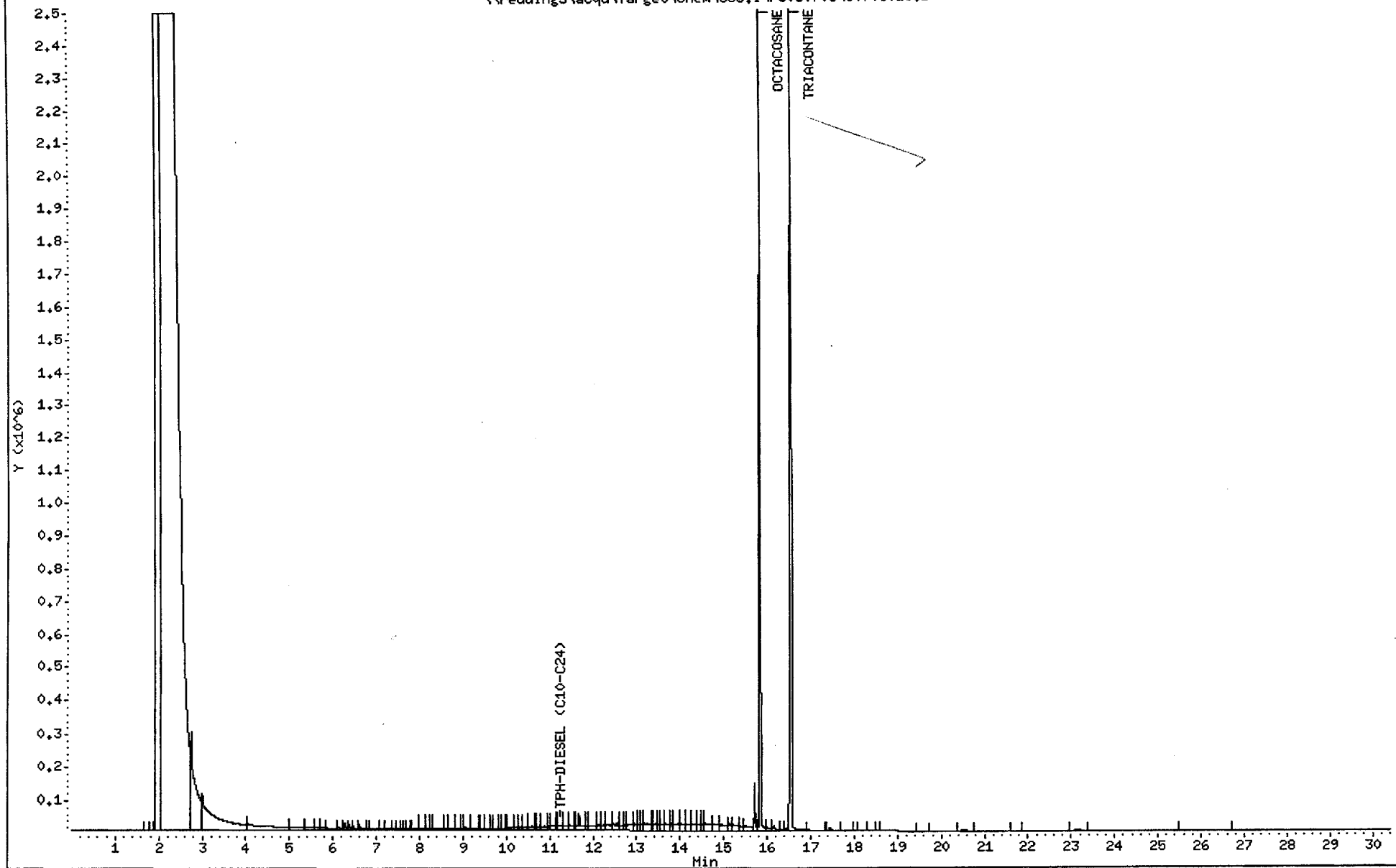
Dilution Factor: 1.0

CAS NO.	COMPOUND	Units: mg/L	MDL	RL	RESULT	Q
	PHCC10C24---TPH-DIESEL (C10-C24)		0.018	0.10	0.14	

Data File: \\redding3\acq
Date : 07-JUL-2005 03:42
Client ID: P13SCGW16F
Sample Info: DF094010
Purge Volume: 1.0
Column phase: RTX-5

Instrument: GCG.i
Operator: -
Column diameter: 0.53

\\redding3\acq\Target\Chem\GCG.i\FG050706\G0706025.D



1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT ID.

P13SCGW07F

Lab Name: COLUMBIA ANALYTICAL SERVICES - REDDING

Case No.: SDG No.: DF094

Lab Sample ID: DF094011

Matrix: WATER Level: LOW

Lab File ID: G0706026

Sample Wt/Vol: 1.010 L

Date Collected: 06/07/05

Extract Vol: 1 ML

Date Extracted: 06/13/05

Date Analyzed: 07/07/05

Extraction Type: SEP FUNNEL

Dilution Factor: 1.0

CAS NO.	COMPOUND	Units: mg/L	MDL	RL	RESULT	Q
	PHCC10C24---TPH-DIESEL (C10-C24)		0.018	0.10	0.12	

Data File: \\redding3\acq\Target\Chem\GCG.i\FG050706\G0706026.D

Date : 07-JUL-2005 04:21

Client ID: P13SCGW07F

Sample Info: DF094011

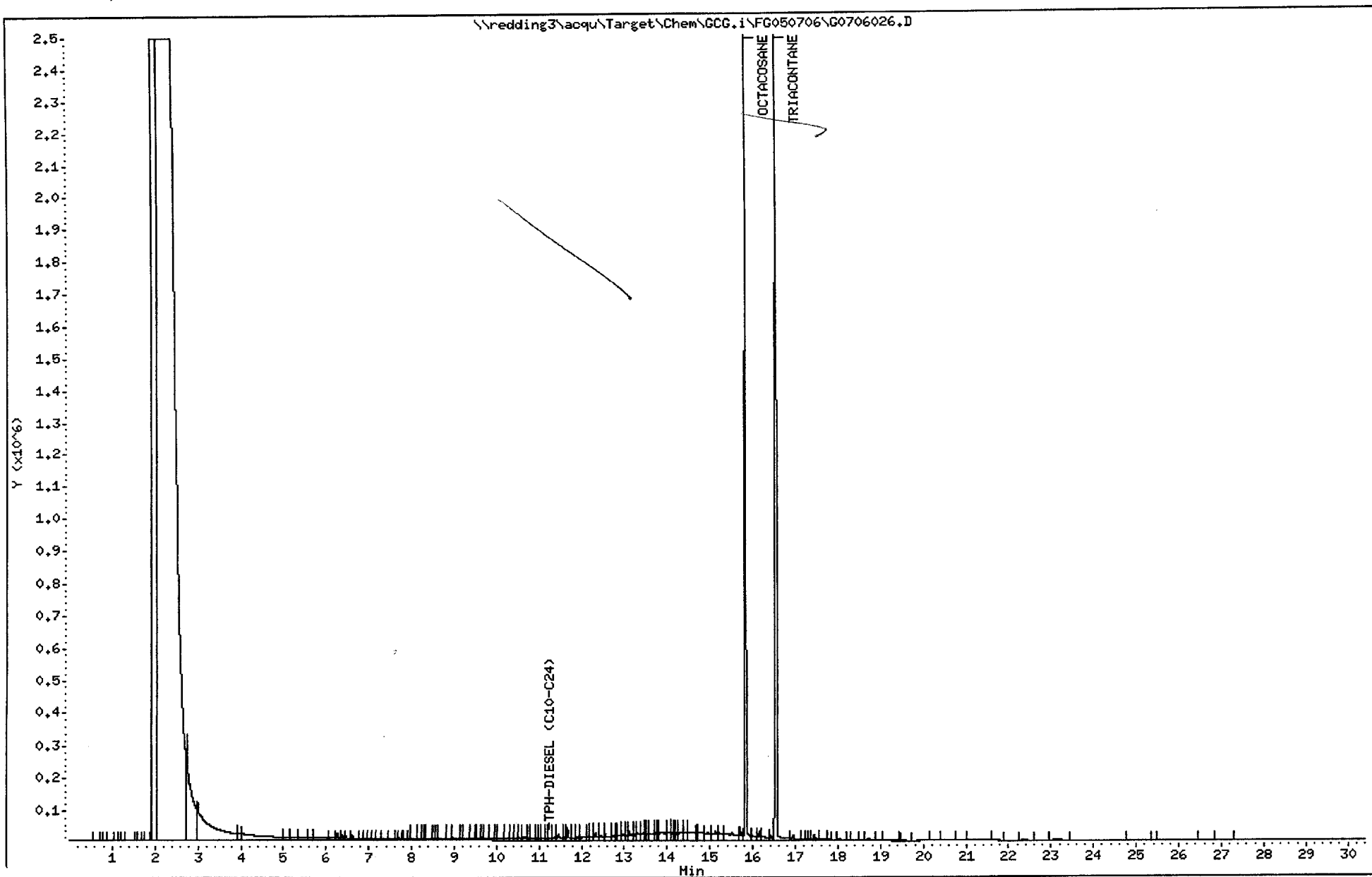
Purge Volume: 1.0

Column phase: RTX-5

Instrument: GCG.i

Operator:

Column diameter: 0.53



1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT ID.

P13SCGW1111F

Lab Name: COLUMBIA ANALYTICAL SERVICES - REDDING

Case No.: SDG No.: DF094 Lab Sample ID: DF094012
Matrix: SOIL Level: LOW Lab File ID: F0707016
Sample Wt/Vol: 50.8 G Date Collected: 06/07/05
Extract Vol: 1 ML Date Extracted: 06/21/05
% Moisture: not dec. 21 Date Analyzed: 07/07/05
Extraction Type: SONICATION Dilution Factor: 100.0

CAS NO.	COMPOUND	Units: mg/Kg	MDL	RL	RESULT	Q
PHCC10C24---	TPH-DIESEL (C10-C24)		80	1200	4200	

Data File: \\redding3\acq\Target\Chem\GCF.i\FG050707\F0707016.D

Date : 07-JUL-2005 20:00

Client ID: P13SCGW1111F

Sample Info: DF094012

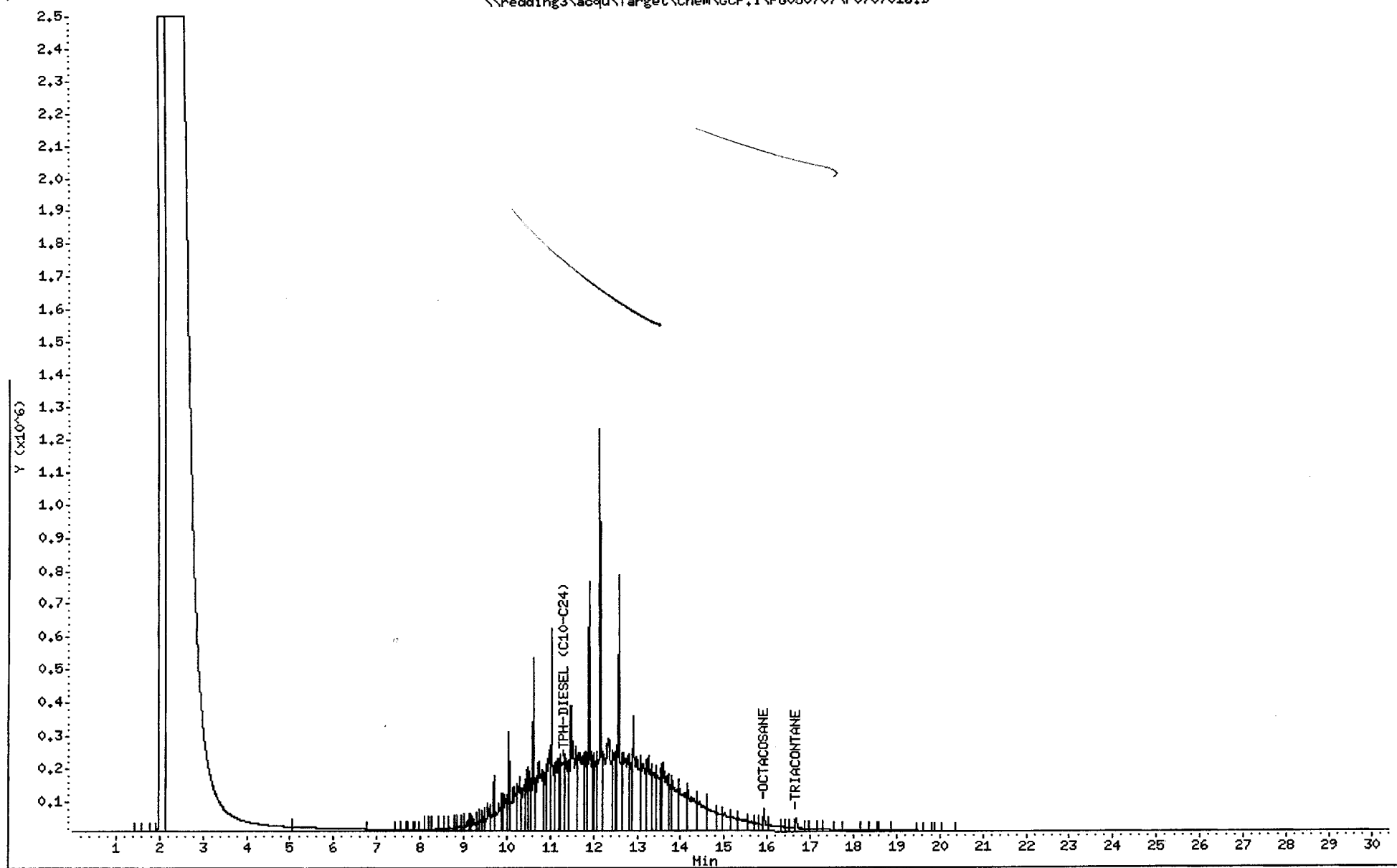
Instrument: GCF.i

Operator: .

Column diameter: 0.53

Column phase: RTX-5

\\redding3\acq\Target\Chem\GCF.i\FG050707\F0707016.D



1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT ID.

P13SCGW1111R

Lab Name: COLUMBIA ANALYTICAL SERVICES - REDDING

Case No.: SDG No.: DF094

Lab Sample ID: DF094013

Matrix: WATER Level: LOW

Lab File ID: G0706027

Sample Wt/Vol: 0.790 L

Date Collected: 06/07/05

Extract Vol: 1 ML

Date Extracted: 06/13/05

Date Analyzed: 07/07/05

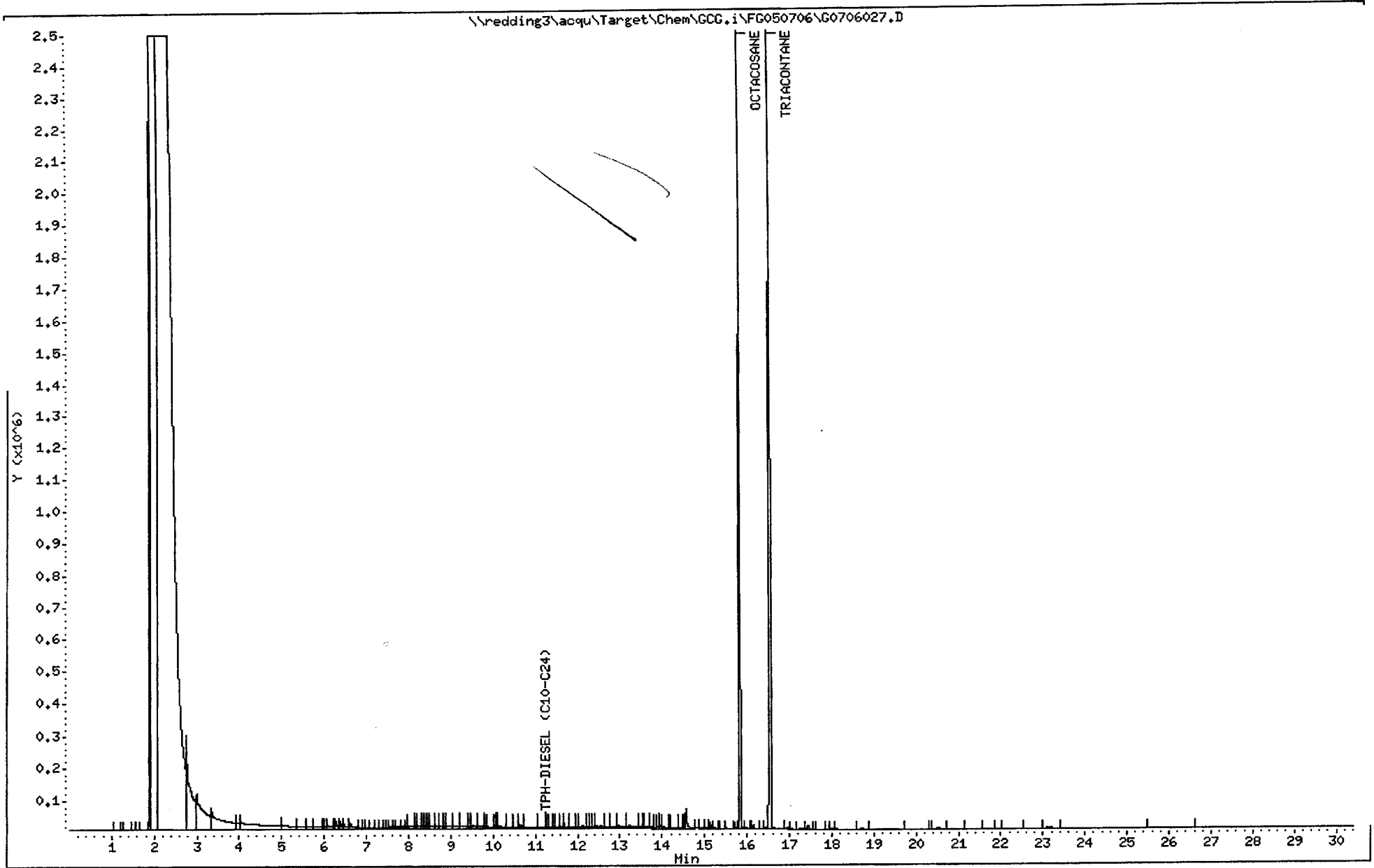
Extraction Type: SEP FUNNEL

Dilution Factor: 1.0

CAS NO.	COMPOUND	Units: mg/L	MDL	RL	RESULT	Q
	PHCC10C24---TPH-DIESEL (C10-C24)		0.023	0.13	0.095	J

Data File: \\redding3\acqu\Target\Chem\GCG.i\FG050706\G0706027.D
Date : 07-JUL-2005 05:02
Client ID: P13SCGW1111R
Sample Info: DF094013
Purge Volume: 0.8
Column phase: RTX-5

Instrument: GCG.i
Operator:
Column diameter: 0.53



QC Summary

Data File: \\redding3\acqu\Target\Chem\GCF.i\F0050707\F0707010.D

Date : 07-JUL-2005 16:00

Client ID: DWB10621

Sample Info: DSB10621

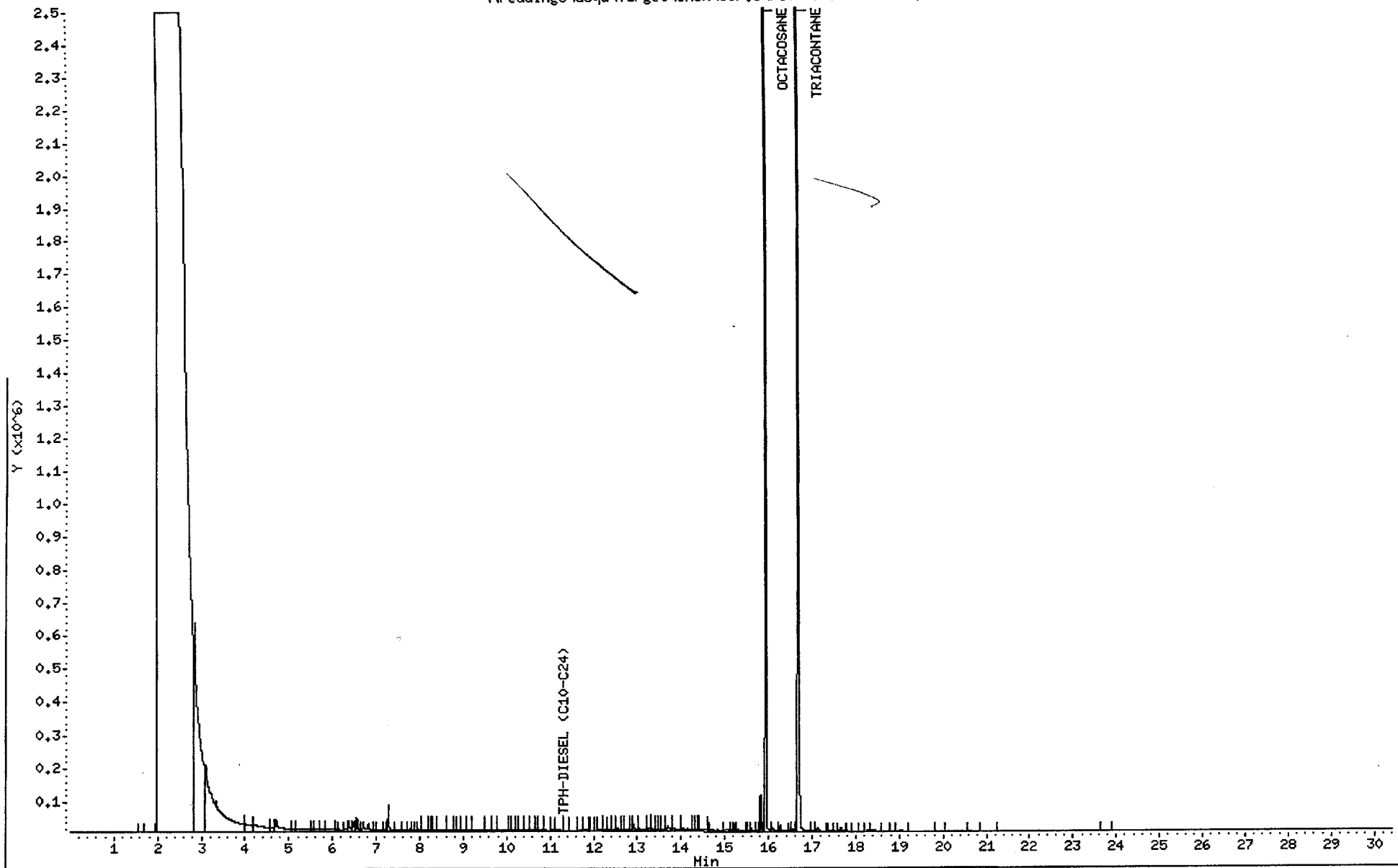
Instrument: GCF.i

Operator: .

Column diameter: 0.53

Column phase: RTX-5

\\redding3\acqu\Target\Chem\GCF.i\F0050707\F0707010.D



Data File: \\redding3\acq
Date : 07-JUL-2005 16:40
Client ID: DSB10621LCS
Sample Info: DSB10621LCS

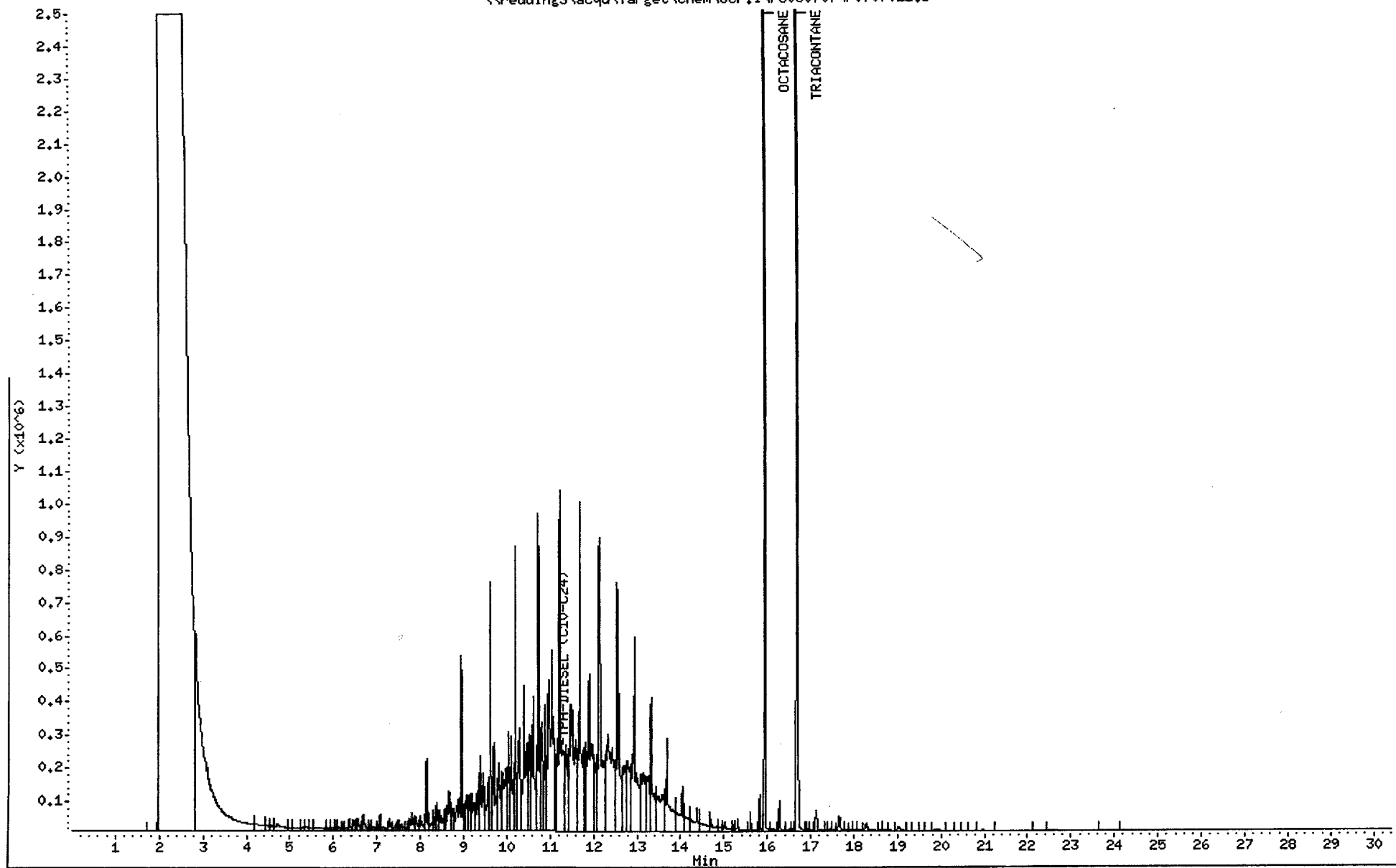
Instrument: GCF.i

Operator: \

Column diameter: 0.53

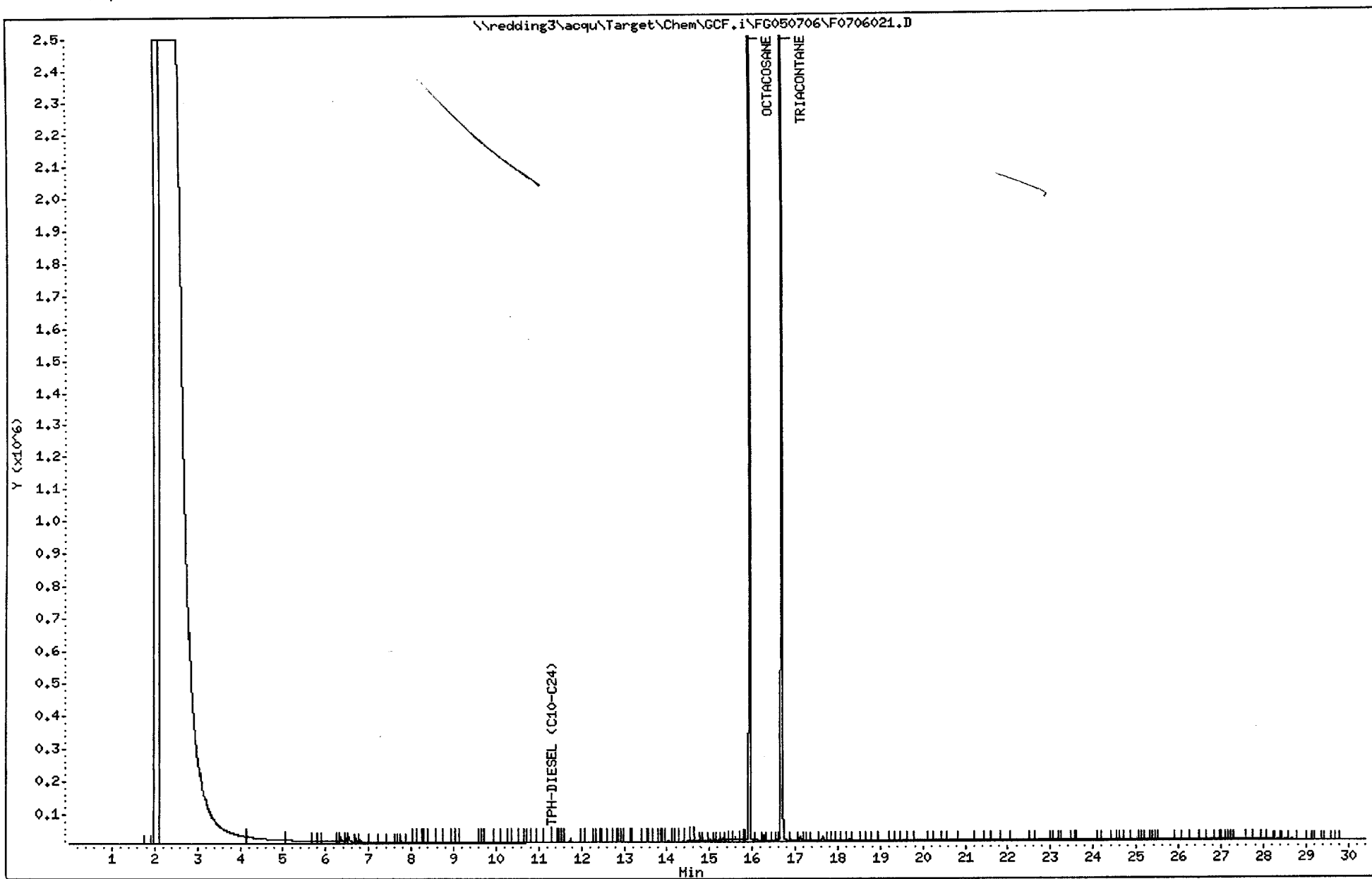
Column phase: RTX-5

\\redding3\acq\Target\Chem\GCF.i\FG050707\F0707011.D



Data File: \\redding3\acq
Date : 07-JUL-2005 01:02
Client ID: DWB10603
Sample Info: DWB10603
Purge Volume: 1.0
Column phaset: RTX-5

Instrument: GCF.i
Operator:
Column diameter: 0.53



Date : 07-JUL-2005 01:42

Client ID: DMB10603LCS

Sample Info: DMB10603LCS

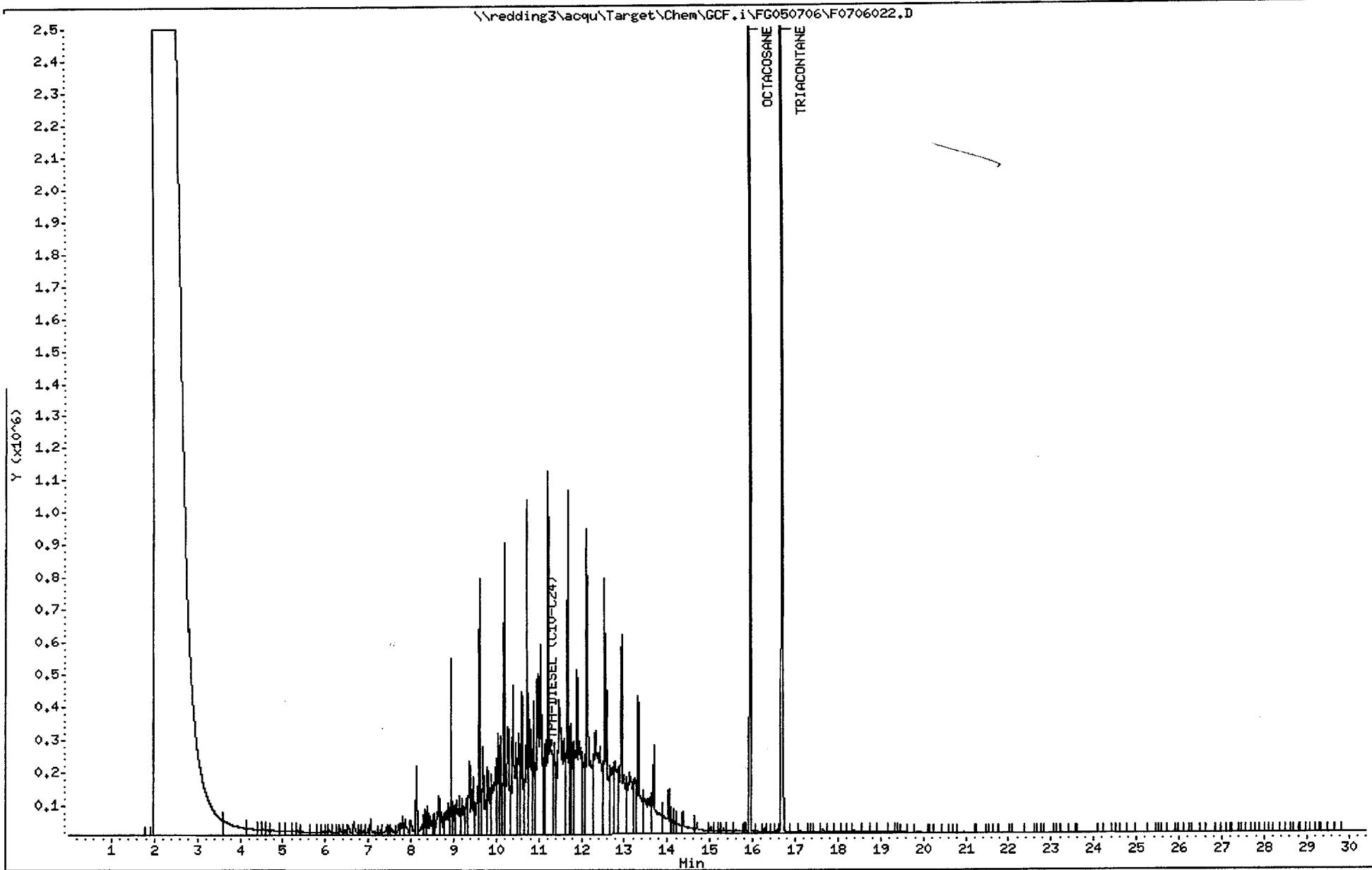
Purge Volume: 1.0

Column phase: RTX-5

Instrument: GCF.i

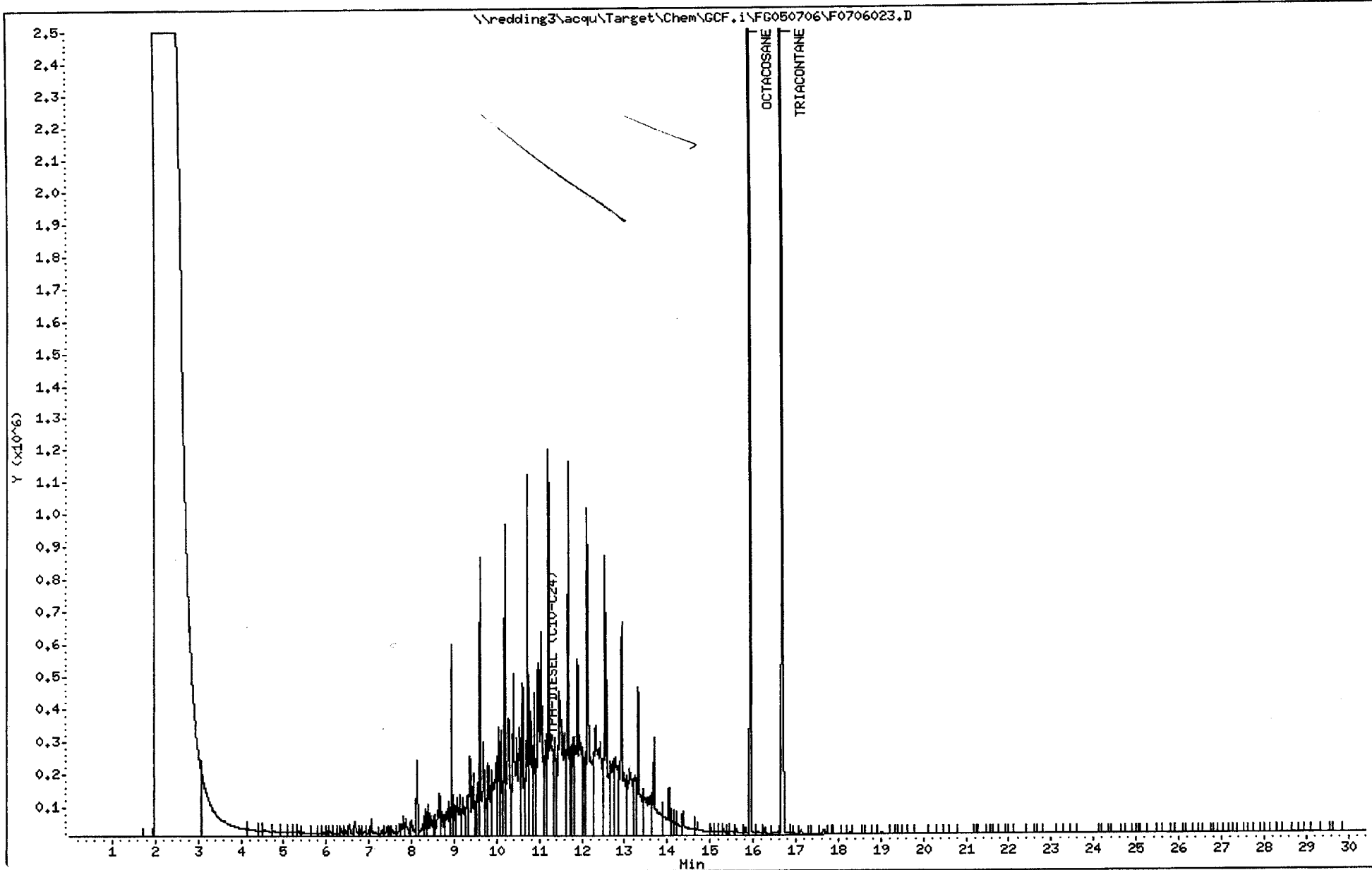
Operator:

Column diameter: 0.53



Data File: \\redding3\acq
Date : 07-JUL-2005 02:22
Client ID: DMB10603LCSD
Sample Info: DMB10603LCSD
Purge Volume: 1.0
Column phase: RTX-5

Instrument: GCF.i
Operator:
Column diameter: 0.53



Data File: \\redding3\acqu\Target\Chem\GCF.i\FG050707\F0707013.D

Page 3

Date : 07-JUL-2005 18:00

Client ID: P13SCGW1408FMS

Sample Info: DF094009MS

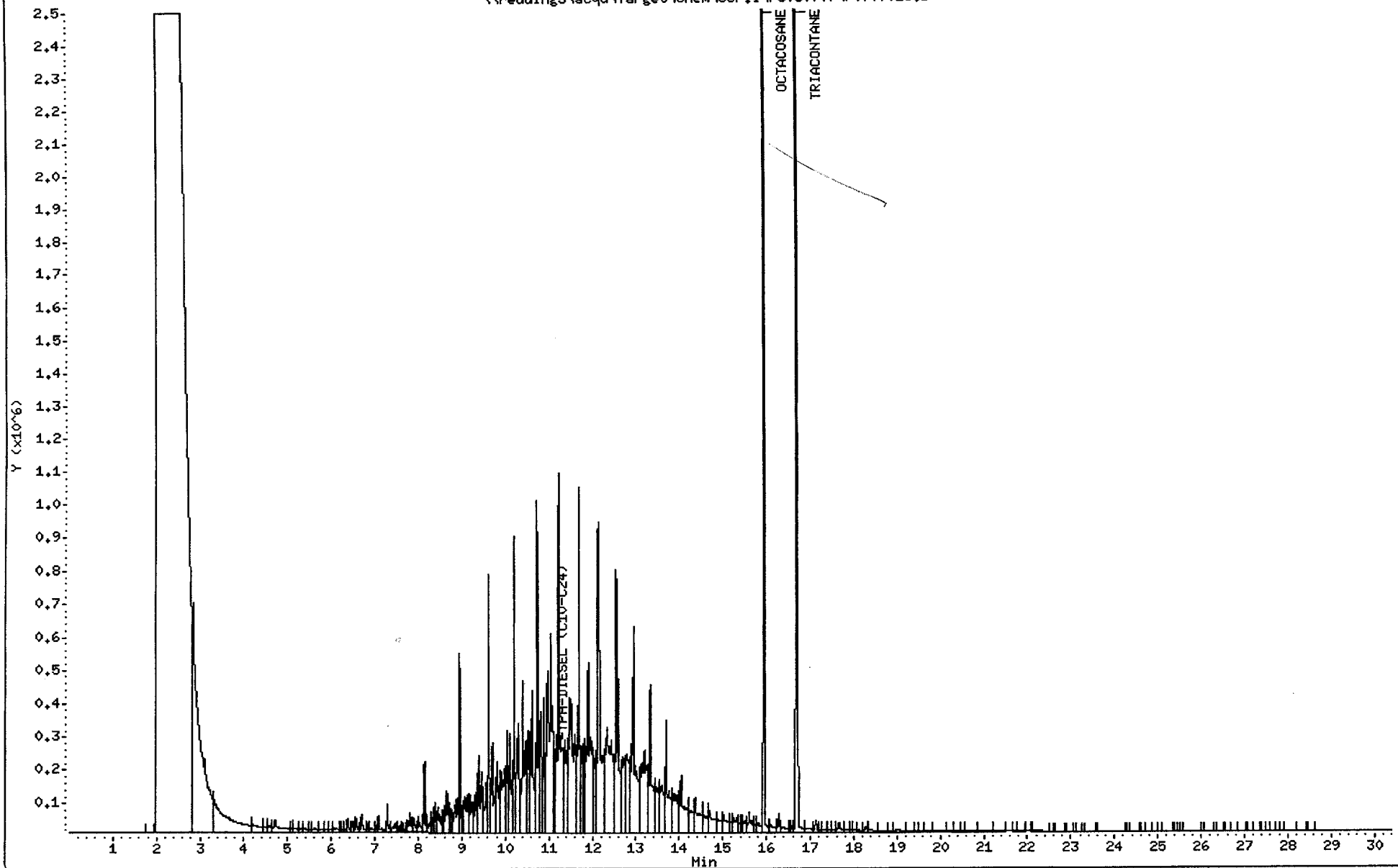
Instrument: GCF.i

Operator: _

Column diameter: 0.53

Column phase: RTX-5

\\redding3\acqu\Target\Chem\GCF.i\FG050707\F0707013.D



Data File: \\redding3\acq\Target\Chem\GCF.i\F0050707\F0707014.D

Page 3

Date : 07-JUL-2006 18:40

Client ID: P13SCGM1408FMSD

Sample Info: DF094009MSD

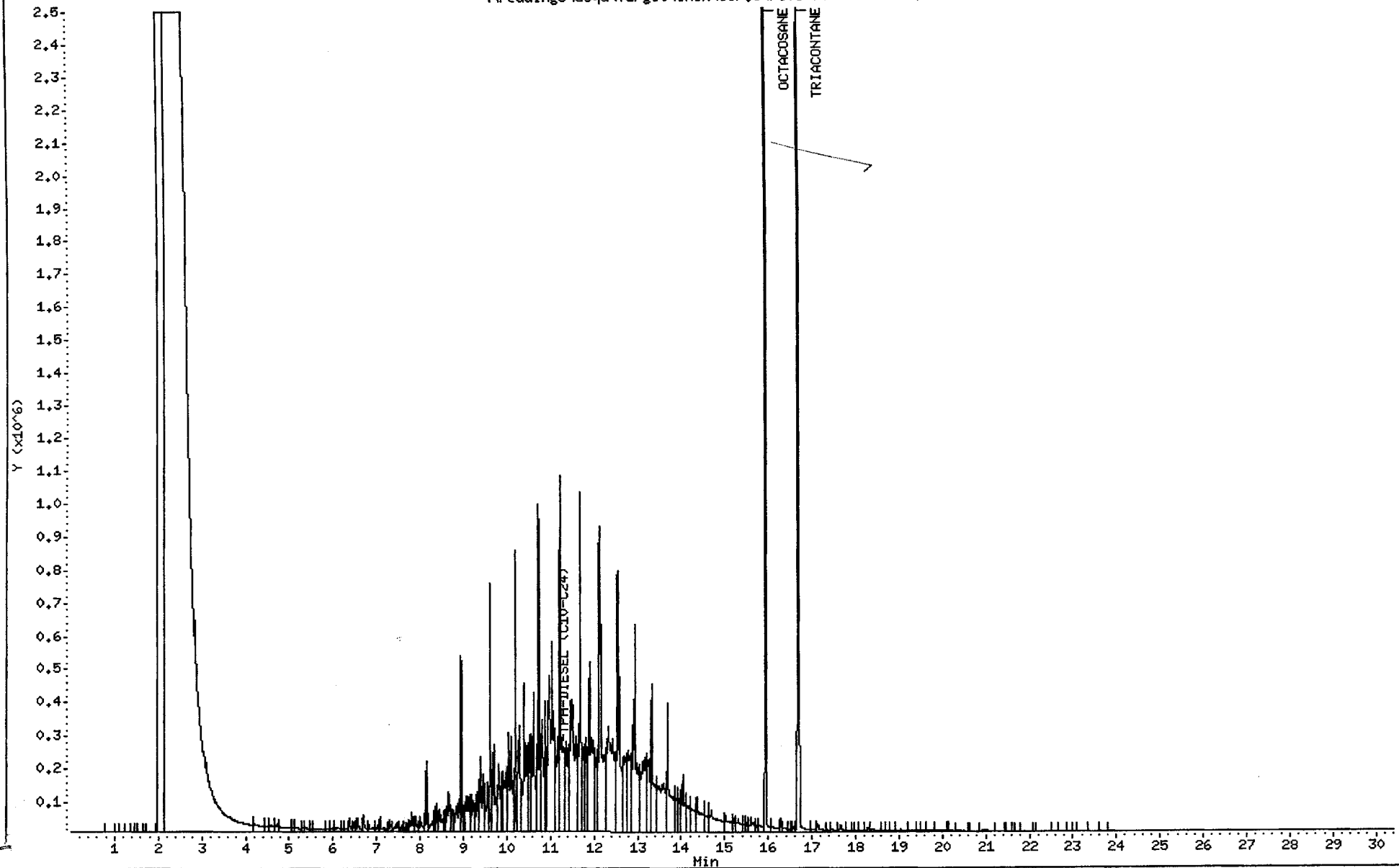
Instrument: GCF.i

Operator:

Column diameter: 0.53

Column phase: RTX-5

\\redding3\acq\Target\Chem\GCF.i\F0050707\F0707014.D



1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT ID.

DSB10621

Lab Name: COLUMBIA ANALYTICAL SERVICES - REDDING

Case No.: SDG No.: DF094

Lab Sample ID: DSB10621

Matrix: SOIL Level: LOW

Lab File ID: F0707010

Sample Wt/Vol: 50.0 G

Date Collected:

Extract Vol: 1 ML

Date Extracted: 06/21/05

Date Analyzed: 07/07/05

Extraction Type: SONICATION

Dilution Factor: 1.0

CAS NO.	COMPOUND	Units: mg/Kg	MDL	RL	RESULT	Q
	PHCC10C24---TPH-DIESEL (C10-C24)		0.63	10	1.3	J

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT ID.

DWB10603

Lab Name: COLUMBIA ANALYTICAL SERVICES - REDDING

Case No.: SDG No.: DF094

Lab Sample ID: DWB10603

Matrix: WATER Level: LOW

Lab File ID: F0706021

Sample Wt/Vol: 1.000 L

Date Collected:

Extract Vol: 1 ML

Date Extracted: 06/13/05

Date Analyzed: 07/07/05

Extraction Type: SEP FUNNEL

Dilution Factor: 1.0

CAS NO.	COMPOUND	Units: mg/L	MDL	RL	RESULT	Q
PHCC10C24---	TPH-DIESEL (C10-C24)		0.018	0.10	0.021	J

2C
SOIL SEMIVOLATILE SURROGATE RECOVERY

Lab Name: COLUMBIA ANALYTICAL SERVICES - REDDING

Case No.: SDG No.: DF094

Level: LOW

	LAB ID	CLIENT ID.	S1 (OCT) #	S2 (TRI) #	S3	TOT OUT
	=====	=====	=====	=====	=====	=====
01	DSB10621	DSB10621	86	84		0
02	DSB10621LCS	DSB10621LCS	87	85		0
03	DF094009	P13SCGW1408F	92	90		0
04	DF094009MS	P13SCGW1408FMS	88	86		0
05	DF094009MSD	P13SCGW1408FMSD	86	84		0
06	DF094012	P13SCGW1111F	0D	0D		0
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30						

		QC LIMITS
S1 (OCT) =	OCTACOSANE	(56-110)
S2 (TRI) =	TRIACONTANE	(52-107)

Column to be used to flag recovery values
 * Values outside of contract required QC limits
 D Surrogates diluted out

2C
WATER SEMIVOLATILE SURROGATE RECOVERY

Lab Name: COLUMBIA ANALYTICAL SERVICES - REDDING

Case No.: SDG No.: DF094

	LAB ID	CLIENT ID.	S1 (OCT) #	S2 (TRI) #	S3	TOT OUT
	=====	=====	=====	=====	=====	=====
01	DWB10603	DWB10603	82	82		0
02	DF094006	P13SCGW12F	82	86		0
03	DWB10603LCS	DWB10603LCS	93	93		0
04	DF094007	P13SCGW15F	72	76		0
05	DWB10603LCSD	DWB10603LCSD	101	101		0
06	DF094010	P13SCGW16F	75	78		0
07	DF094001	P13SCGW01F	94	93		0
08	DF094011	P13SCGW07F	75	79		0
09	DF094013	P13SCGW1111R	69	74		0
10	DF094003	P13SCGW13D	104	103		0
11	DF094008	P13SCGW14F	91	87		0
12	DF094005	P13SCGW11F	104	102		0
13	DF094004	P13SCGW10F	103	100		0
14	DF094002	P13SCGW13F	0D	0D		0
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30						

QC LIMITS

S1 (OCT) = OCTACOSANE (58-111)

S2 (TRI) = TRIACONTANE (54-109)

Column to be used to flag recovery values

* Values outside of contract required QC limits

D Surrogates diluted out

3C
SOIL SEMIVOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: COLUMBIA ANALYTICAL SERVICES - REDDING

Case No.: SDG No.: DF094

Matrix Spike - Sample No.: P13SCGW1408F Level: LOW

COMPOUND	SPIKE ADDED (mg/Kg)	SAMPLE CONCENTRATION (mg/Kg)	MS CONCENTRATION (mg/Kg)	MS % REC #	QC. LIMITS REC.
TPH-DIESEL (C10-C24)	63.545	5.3297	56.857	81	65-135

COMPOUND	SPIKE ADDED (mg/Kg)	MSD CONCENTRATION (mg/Kg)	MSD % REC #	% RPD #	QC LIMITS RPD	REC.
TPH-DIESEL (C10-C24)	63.089	55.570	80	2	30	65-135

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

RPD: 0 out of 1 outside limits
Spike Recovery: 0 out of 2 outside limits

3D
SOIL SEMIVOLATILE LAB CONTROL SAMPLE

Lab Name: COLUMBIA ANALYTICAL SERVICES - REDDING

Case No.: SDG No.: DF094

LCS - Sample No.: DSB10621 Level: LOW

COMPOUND	SPIKE ADDED (mg/Kg)	SAMPLE CONCENTRATION (mg/Kg)	LCS CONCENTRATION (mg/Kg)	LCS % REC #	QC. LIMITS REC.
=====	=====	=====	=====	=====	=====
TPH-DIESEL (C10-C24)	50.000	N/A	39.945	80	65-135

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

RPD: 0 out of 0 outside limits
Spike Recovery: 0 out of 1 outside limits

3C
WATER SEMIVOLATILE LAB CONTROL SAMPLE

Lab Name: COLUMBIA ANALYTICAL SERVICES - REDDING

Case No.: SDG No.: DF094

LCS - Sample No.: DWB10603

COMPOUND	SPIKE ADDED (mg/L)	SAMPLE CONCENTRATION (mg/L)	LCS CONCENTRATION (mg/L)	LCS % REC #	QC. LIMITS REC.
=====	=====	=====	=====	=====	=====
TPH-DIESEL (C10-C24)	2.5000	N/A	2.0707	83	65-135

COMPOUND	SPIKE ADDED (mg/L)	LCSD CONCENTRATION (mg/L)	LCSD % REC #	% RPD #	QC LIMITS RPD	REC.
=====	=====	=====	=====	=====	=====	=====
TPH-DIESEL (C10-C24)	2.5000	2.2417	90	8	20	65-135

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

RPD: 0 out of 1 outside limits
Spike Recovery: 0 out of 2 outside limits

4B
SEMIVOLATILE METHOD BLANK SUMMARY

Client ID.

DSB10621

Lab Name: COLUMBIA ANALYTICAL SERVICES - REDDING

Case No.: SDG No.: DF094

Lab File ID: F0707010

Lab Sample ID: DSB10621

Date Extracted: 06/21/05

Extraction Type: SONICATION

Date Analyzed: 07/07/05

Time Analyzed: 1600

Matrix: SOIL

Level: (low/med) LOW

Instrument ID: GCF

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

	CLIENT ID.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
	=====	=====	=====	=====
01	DSB10621LCS	DSB10621LCS	F0707011	07/07/05
02	P13SCGW1408F	DF094009	F0707012	07/07/05
03	P13SCGW1408FMS	DF094009MS	F0707013	07/07/05
04	P13SCGW1408FMSD	DF094009MSD	F0707014	07/07/05
05	P13SCGW1111F	DF094012	F0707016	07/07/05
06				
07				
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4B
SEMIVOLATILE METHOD BLANK SUMMARY

Client ID.

DWB10603

Lab Name: COLUMBIA ANALYTICAL SERVICES - REDDING

Case No.: SDG No.: DF094

Lab File ID: F0706021

Lab Sample ID: DWB10603

Date Extracted: 06/13/05

Extraction Type: SEP FUNNEL

Date Analyzed: 07/07/05

Time Analyzed: 0102

Matrix: WATER

Level: (low/med) LOW

Instrument ID: GCF

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

	CLIENT ID.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
	=====	=====	=====	=====
01	P13SCGW12F	DF094006	G0706022	07/07/05
02	DWB10603LCS	DWB10603LCS	F0706022	07/07/05
03	P13SCGW15F	DF094007	G0706023	07/07/05
04	DWB10603LCSD	DWB10603LCSD	F0706023	07/07/05
05	P13SCGW16F	DF094010	G0706025	07/07/05
06	P13SCGW01F	DF094001	F0706026	07/07/05
07	P13SCGW07F	DF094011	G0706026	07/07/05
08	P13SCGW1111R	DF094013	G0706027	07/07/05
09	P13SCGW13D	DF094003	G0707005	07/07/05
10	P13SCGW14F	DF094008	G0707006	07/07/05
11	P13SCGW11F	DF094005	G0707007	07/07/05
12	P13SCGW10F	DF094004	G0707008	07/07/05
13	P13SCGW13F	DF094002	G0707009	07/07/05
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Standards data

6C
SEMIVOLATILE ORGANICS INITIAL CALIBRATION DATA
ANALYTE CONCENTRATIONS

Lab Name: COLUMBIA ANALYTICAL SERVICES - REDDING

Case No.: SDG No.: DF094

Instrument ID: GCF

ICAL Date(s): 07/06/05

Analyte Concentration:

LAB FILE ID:		RRF0.1=F0706003.D	RRF0.5=F0706004.D		
RRF1 =F0706005.D		RRF2.5=F0706006.D	RRF4 =F0706007.D		
COMPOUND	RRF0.1	RRF0.5	RRF1	RRF2.5	RRF4
=====	=====	=====	=====	=====	=====
TPH-DIESEL (C10-C24)	0.100	0.500	1.000	2.500	4.000
=====	=====	=====	=====	=====	=====
OCTACOSANE	0.100	0.150	0.250	0.300	0.350
TRIACONTANE	0.100	0.150	0.250	0.300	0.350

6C
SEMIVOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: COLUMBIA ANALYTICAL SERVICES - REDDING

Case No.: SDG No.: DF094

Instrument ID: GCF

ICAL Date(s): 07/06/05

LAB FILE ID:		RRF0.1=F0706003.D		RRF0.5=F0706004.D			
RRF1 =F0706005.D		RRF2.5=F0706006.D		RRF4 =F0706007.D			
COMPOUND	RRF0.1	RRF0.5	RRF1	RRF2.5	RRF4	\overline{RRF}	%RSD
TPH-DIESEL (C10-C24)	3490	2999	3054	3051	3072	3133	6.4
OCTACOSANE	3025	3175	3074	3284	3157	3143	3.2
TRIACONTANE	3090	3225	3118	3333	3202	3193	3.0

RF's divided by 10000

6C
SEMIVOLATILE ORGANICS INITIAL CALIBRATION DATA
ANALYTE CONCENTRATIONS

Lab Name: COLUMBIA ANALYTICAL SERVICES - REDDING

Case No.: SDG No.: DF094

Instrument ID: GCG

ICAL Date(s): 07/06/05

Analyte Concentration:

LAB FILE ID:		RRF0.1=G0706003.D	RRF0.5=G0706004.D		
RRF1 =G0706005.D		RRF2.5=G0706006.D	RRF4 =G0706007.D		
COMPOUND	RRF0.1	RRF0.5	RRF1	RRF2.5	RRF4
TPH-DIESEL (C10-C24)	0.100	0.500	1.000	2.500	4.000
OCTACOSANE	0.100	0.150	0.250	0.300	0.350
TRIACONTANE	0.100	0.150	0.250	0.300	0.350

6C
SEMIVOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: COLUMBIA ANALYTICAL SERVICES - REDDING

Case No.: SDG No.: DF094

Instrument ID: GCG

ICAL Date(s): 07/06/05

LAB FILE ID:		RRF0.1=G0706003.D		RRF0.5=G0706004.D				
RRF1 =G0706005.D		RRF2.5=G0706006.D		RRF4 =G0706007.D				
COMPOUND		RRF0.1	RRF0.5	RRF1	RRF2.5	RRF4	RRF	%RSD
=====		=====	=====	=====	=====	=====	=====	=====
TPH-DIESEL (C10-C24)		4070	3024	3384	2977	3422	3375	13.0
=====		=====	=====	=====	=====	=====	=====	=====
OCTACOSANE		2594	2680	3037	3267	3716	3059	14.9
TRIACONTANE		2702	2815	3098	3189	3661	3093	12.1

RF's divided by 10000

7B
SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: COLUMBIA ANALYTICAL SERVICES - REDDING

Instrument ID: GCF Case No.: SDG No.: DF094

Lab File ID: F0706008 CCV Date/Time: 07/06/05 1625

ICAL Date/Time (1st pt): 07/06/05 1301

ICAL Date/Time (Last pt): 07/06/05 1541

COMPOUND	RRF	RRF1	CURVE TYPE	%D	MAX %D
TPH-DIESEL (C10-C24)	3133	3136	AVG	0.1	15.0
OCTACOSANE	3143	3309	AVG	5.3	15.0
TRIACONTANE	3193	3360	AVG	5.2	15.0

RF's divided by 10000

7B
SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: COLUMBIA ANALYTICAL SERVICES - REDDING

Instrument ID: GCF Case No.: SDG No.: DF094

Lab File ID: F0706020 CCV Date/Time: 07/07/05 0022

ICAL Date/Time (1st pt): 07/06/05 1301

ICAL Date/Time (Last pt): 07/06/05 1541

COMPOUND	RRF	RRF1	CURVE TYPE	%D	MAX %D
TPH-DIESEL (C10-C24)	3133	2994	AVG	-4.4	15.0
OCTACOSANE	3143	3197	AVG	1.7	15.0
TRIACONTANE	3193	3280	AVG	2.7	15.0

RF's divided by 10000

7B
SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: COLUMBIA ANALYTICAL SERVICES - REDDING

Instrument ID: GCF Case No.: SDG No.: DF094

Lab File ID: F0706030 CCV Date/Time: 07/07/05 0701

ICAL Date/Time (1st pt): 07/06/05 1301

ICAL Date/Time (Last pt): 07/06/05 1541

COMPOUND	RRF	RRF2.5	CURVE TYPE	%D	MAX %D
TPH-DIESEL (C10-C24)	3133	3044	AVG	-2.8	15.0
OCTACOSANE	3143	3331	AVG	6.0	15.0
TRIACONTANE	3193	3397	AVG	6.4	15.0

RF's divided by 10000

7B
SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: COLUMBIA ANALYTICAL SERVICES - REDDING

Instrument ID: GCG Case No.: SDG No.: DF094

Lab File ID: G0706008 CCV Date/Time: 07/06/05 1625

ICAL Date/Time (1st pt): 07/06/05 1301

ICAL Date/Time (Last pt): 07/06/05 1541

COMPOUND	RRF	RRF1	CURVE TYPE	%D	MAX %D
TPH-DIESEL (C10-C24)	3375	3127	AVG	-7.4	15.0
OCTACOSANE	3059	2906	AVG	-5.0	15.0
TRIACONTANE	3093	3011	AVG	-2.7	15.0

RF's divided by 10000

7B
SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: COLUMBIA ANALYTICAL SERVICES - REDDING

Instrument ID: GCG Case No.: SDG No.: DF094

Lab File ID: G0706019 CCV Date/Time: 07/06/05 2343

ICAL Date/Time (1st pt): 07/06/05 1301

ICAL Date/Time (Last pt): 07/06/05 1541

COMPOUND	RRF	RRF1	CURVE TYPE	%D	MAX %D
TPH-DIESEL (C10-C24)	3375	3083	AVG	-8.7	15.0
OCTACOSANE	3059	2706	AVG	-11.5	15.0
TRIACONTANE	3093	2830	AVG	-8.5	15.0

RF's divided by 10000

7B
SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: COLUMBIA ANALYTICAL SERVICES - REDDING

Instrument ID: GCG

Case No.:

SDG No.: DF094

Lab File ID: G0706029

CCV Date/Time:

07/07/05 0621

ICAL Date/Time (1st pt): 07/06/05 1301

ICAL Date/Time (Last pt): 07/06/05 1541

COMPOUND	RRF	RRF2.5	CURVE TYPE	%D	MAX %D
TPH-DIESEL (C10-C24)	3375	2988	AVG	-11.5	15.0
OCTACOSANE	3059	3224	AVG	5.4	15.0
TRIACONTANE	3093	3161	AVG	2.2	15.0

RF's divided by 10000

7B
SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: COLUMBIA ANALYTICAL SERVICES - REDDING

Instrument ID: GCG

Case No.:

SDG No.: DF094

Lab File ID: G0707002

CCV Date/Time:

07/07/05 1041

ICAL Date/Time (1st pt): 07/06/05 1301

ICAL Date/Time (Last pt): 07/06/05 1541

COMPOUND	RRF	RRF1	CURVE TYPE	%D	MAX %D
TPH-DIESEL (C10-C24)	3375	3036	AVG	-10.0	15.0
OCTACOSANE	3059	2751	AVG	-10.0	15.0
TRIACONTANE	3093	2852	AVG	-7.8	15.0

RF's divided by 10000

7B
SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: COLUMBIA ANALYTICAL SERVICES - REDDING

Instrument ID: GCG

Case No.:

SDG No.: DF094

Lab File ID: G0707010

CCV Date/Time:

07/07/05 1600

ICAL Date/Time (1st pt): 07/06/05 1301

ICAL Date/Time (Last pt): 07/06/05 1541

COMPOUND	RRF	RRF2.5	CURVE TYPE	%D	MAX %D
TPH-DIESEL (C10-C24)	3375	3025	AVG	-10.4	15.0
OCTACOSANE	3059	3351	AVG	9.6	15.0
TRIACONTANE	3093	3279	AVG	6.0	15.0

RF's divided by 10000

7B
SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: COLUMBIA ANALYTICAL SERVICES - REDDING

Instrument ID: GCF Case No.: SDG No.: DF094

Lab File ID: F0707009 CCV Date/Time: 07/07/05 1520

ICAL Date/Time (1st pt): 07/06/05 1301

ICAL Date/Time (Last pt): 07/06/05 1541

COMPOUND	RRF	RRF2.5	CURVE TYPE	%D	MAX %D
TPH-DIESEL (C10-C24)	3133	2991	AVG	-4.5	15.0
OCTACOSANE	3143	3248	AVG	3.3	15.0
TRIACONTANE	3193	3257	AVG	2.0	15.0

RF's divided by 10000

7B
SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: COLUMBIA ANALYTICAL SERVICES - REDDING

Instrument ID: GCF Case No.: SDG No.: DF094

Lab File ID: F0707019 CCV Date/Time: 07/07/05 2159

ICAL Date/Time (1st pt): 07/06/05 1301

ICAL Date/Time (Last pt): 07/06/05 1541

COMPOUND	\overline{RRF}	RRF1	CURVE TYPE	%D	MAX %D
TPH-DIESEL (C10-C24)	3133	3005	AVG	-4.1	15.0
OCTACOSANE	3143	2942	AVG	-6.4	15.0
TRIACONTANE	3193	2786	AVG	-12.8	15.0

RF's divided by 10000

8D
SEMIVOLATILE ANALYTICAL SEQUENCE

Lab Name: COLUMBIA ANALYTICAL SERVICES - REDDING

Case No.: SDG No.: DF094

GC Column: RTX-5 ID: 0.53 (mm) ICAL Date(s): 07/06/05 07/06/05

Instrument ID: GCF

	CLIENT SAMPLE ID	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED
01	DSTD1	DSTD1	07/06/05	1301
02	DSTD2	DSTD2	07/06/05	1341
03	DSTD3	DSTD3	07/06/05	1421
04	DSTD4	DSTD4	07/06/05	1501
05	DSTD5	DSTD5	07/06/05	1541
06	QCALTSTD	QCALTSTD	07/06/05	1625
07	DSTD3	DSTD3	07/07/05	0022
08	DWB10603	DWB10603	07/07/05	0102
09	DWB10603LCS	DWB10603LCS	07/07/05	0142
10	DWB10603LCSD	DWB10603LCSD	07/07/05	0222
11	P13SCGW01F	DF094001	07/07/05	0421
12	DSTD4	DSTD4	07/07/05	0701
13	DSTD4	DSTD4	07/07/05	1520
14	DSB10621	DSB10621	07/07/05	1600
15	DSB10621LCS	DSB10621LCS	07/07/05	1640
16	P13SCGW1408F	DF094009	07/07/05	1720
17	P13SCGW1408FMS	DF094009MS	07/07/05	1800
18	P13SCGW1408FMSD	DF094009MSD	07/07/05	1840
19	P13SCGW1111F	DF094012	07/07/05	2000
20	DSTD3	DSTD3	07/07/05	2159
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8D
SEMIVOLATILE ANALYTICAL SEQUENCE

Lab Name: COLUMBIA ANALYTICAL SERVICES - REDDING

Case No.: SDG No.: DF094

GC Column: RTX-5 ID: 0.53 (mm) ICAL Date(s): 07/06/05 07/06/05

Instrument ID: GCG

	CLIENT SAMPLE ID	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED
	=====	=====	=====	=====
01	DSTD1	DSTD1	07/06/05	1301
02	DSTD2	DSTD2	07/06/05	1341
03	DSTD3	DSTD3	07/06/05	1421
04	DSTD4	DSTD4	07/06/05	1501
05	DSTD5	DSTD5	07/06/05	1541
06	QCALSTD	QCALSTD	07/06/05	1625
07	DSTD3	DSTD3	07/06/05	2343
08	P13SCGW12F	DF094006	07/07/05	0142
09	P13SCGW15F	DF094007	07/07/05	0222
10	P13SCGW16F	DF094010	07/07/05	0342
11	P13SCGW07F	DF094011	07/07/05	0421
12	P13SCGW1111R	DF094013	07/07/05	0502
13	DSTD4	DSTD4	07/07/05	0621
14	DSTD3	DSTD3	07/07/05	1041
15	P13SCGW13D	DF094003	07/07/05	1240
16	P13SCGW14F	DF094008	07/07/05	1320
17	P13SCGW11F	DF094005	07/07/05	1400
18	P13SCGW10F	DF094004	07/07/05	1440
19	P13SCGW13F	DF094002	07/07/05	1520
20	DSTD4	DSTD4	07/07/05	1600
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